P406 N21 v.12 1945 c.1

SPEECH MONOGRAPHS

PUBLISHED BY
THE NATIONAL ASSOCIATION OF TEACHERS OF SPEECH

Volume XII RESEARCH ANNUAL 1945

GRADUATE THESES—AN INDEX OF GRADUATE WORK IN THE FIELD OF SPEECH—XI. *Franklin H. Knower* 1

GRADUATE THESES—A COMBINED INDEX OF REPORTS OF GRADUATE WORK IN THE FIELD OF SPEECH AND DRAMATIC ART—XII, 1902-1944. *Franklin H. Knower* 9

A Study of Voice Change in Boys Between the Ages of Eleven and Sixteen. *Charles P. Pedrey* 30

Muscle Spasticity in Functional Aphonia and Dysphonia. *Hertha Tarrasch* 37

An Experimental Study of Some of the Relationships Between Voice and Personality Among Students of Speech. *Melba Hurd Duncan* 47

An Analytical Study of the Social and Speech Adjustment of Good and Poor Speakers by Means of the Autobiographic Method. *Katherine F. Thorn* and *Bryng Bryngelson* 61

"Short 'O' Vowels" in American Speech: Massachusetts. *Clyde W. Dow* 74

A Study of the Vocabulary of Radio. *Donald E. Hargis* 77

A Study of Some Factors Related to Conversational Ability. *Eugene T. McDonald* 88

An Experimental Study of the Relative Effectiveness of Certain Forms of Emphasis in Public Speaking. *Ray Ehrensberger* 94

Theodore Roosevelt's Principles of Speech Preparation and Delivery. *William A. Behl* 112

R406 N21 v.12 1945 c.1

SPEECH MONOGRAPHS

PUBLISHED BY
THE NATIONAL ASSOCIATION OF TEACHERS OF SPEECH

LOREN D. REID, *Executive Secretary*
University of Missouri, Columbia, Missouri

EDITOR
RUSSELL H. WAGNER
Cornell University, Ithaca, N. Y.

EDITORIAL BOARD

VIRGIL A. ANDERSON, *Leland Stanford University*
WILBUR S. HOWELL, *Princeton University*
CLAUDE E. KANTNER, *University of Oregon Medical School*
GEORGE R. KERNODLE, *State University of Iowa*
FRANKLIN H. KNOWER, *State University of Iowa*

* * *

Correspondence concerning issues should be addressed to the Columbia Office. Correspondence concerning manuscripts should be addressed to the Editor. Copyright, 1945, by the National Association of Teachers of Speech.

Single copies, $2.00

THE QUARTERLY JOURNAL OF SPEECH

The Official Publication

of

THE NATIONAL ASSOCIATION OF
TEACHERS OF SPEECH

THE QUARTERLY JOURNAL OF SPEECH is published in the months of February, April, October, and December by THE NATIONAL ASSOCIATION OF TEACHERS OF SPEECH.

Subscription price $5.00 a year, including membership in THE NATIONAL ASSOCIATION OF TEACHERS OF SPEECH. Single copies of current issue, $1.00. All remittances should be payable to THE QUARTERLY JOURNAL OF SPEECH.

Index and title page for the current volume is bound in each December JOURNAL.

A Table of Contents of all back issues of THE QUARTERLY JOURNAL OF SPEECH and SPEECH MONOGRAPHS is available at 25 cents a copy.

SUSTAINING MEMBERS

of

THE NATIONAL ASSOCIATION OF TEACHERS OF SPEECH

**Those reported serving with the armed forces*

ALABAMA

MARSEE F. EVANS, Birmingham-Southern College
ELLEN-HAVEN GOULD, Alabama College
T. EARLE JOHNSON, University of Alabama
A. FLORENCE MAY, Tuskegee Institute
*LESTER RAINES, University of Alabama

ARIZONA

W. ARTHUR CABLE, University of Arizona
KLONDA LYNN, State Teachers College

ARKANSAS

VIVIAN E. TATE HEGWOOD, Dunbar High School, Little Rock
LEONA SCOTT, Arkansas State Teachers College
GARRETT L. STARMER, Hendrix College

CALIFORNIA

JOSEPH H. BACCUS, University of Redlands
*N. B. BECK, Stanford University
EDWARD S. BETZ, College of the Pacific
J. RICHARD BIETRY, Los Angeles
JAMES H. BUTLER, San Jose, State College
MORRIS COHEN, Speech Studio, Hollywood
BARBARA DOSS, Central Union High School, El Centro
NORMAN WILLIAM FREESTONE, Occidental College
LETA B. GOLD, Pasadena Community Playhouse
ALTA B. HALL, University of Southern California
J. MARIAN HAMMOND, University of California at Santa Barbara
TREVOR L. HAWKINS, University of Southern California
DOROTHY KAUCHER, San Jose State College
*J. DOUGLAS KNOX, Glendale High School
VALENTINE KRIKORIAN, San Buena Ventura Elementary Schools
EVELYN M. S. LABADIE, Emerson College of Self-Expression, Hollywood
VIVIAN CLARKE LANG, Burbank Public Schools
CHARLES F. LINDSLEY, Occidental College
J. EDMUND MAYER, Alhambra High School
ROY C. MCCALL, College of the Pacific
JANKA MCCLATCHEY, Los Angeles
MERRILL WARD MCCLATCHEY, Los Angeles
OCEA MCMURRY, Santa Barbara High School
FRIEDA JOAN MEBLIN, University of Southern California
LAWRENCE C. MENDENHALL, San Jose
ALBERT O. MITCHELL, University of California at Santa Barbara
ALAN NICHOLS, University of Southern California
E. R. NICHOLS, University of Redlands
DWIGHT WATKINS, University of California
CONRAD F. WEDBERG, University of Southern California
CHARLOTTE G. WELLS, Stanford University

COLORADO

ELWOOD MURRAY, University of Denver

CONNECTICUT

JULIA C. FARNAM, Central High School, Bridgeport
JOSEPHINE HUNTER RAY, Connecticut College
FLORENCE ROLL, Albertus Magnus College

DISTRICT OF COLUMBIA

GRACE W. ATHERTON, Washington Public Schools
GEORGE E. BEAUCHAMP, Washington
MRS. HUGH BUTLER, Georgetown Visitation Convent
LOUISE F. DENNEY, Cardoza High School, Washington
LEONEA B. DUDLEY, Howard University
GILBERT V. HARTKE, The Catholic University of America
RICHARD R. HUTCHESON, District Speech Clinic, Washington
NORMAN W. MATTIS, The American Red Cross
ALAN SCHNEIDER, The Catholic University of America
RALPHINE R. STARING, Children's Theatre School, Washington
MARJORIE WEBSTER, Marjorie Webster Junior College

FLORIDA

GENEVA EPPES, Jacksonville
*ROBERT B. HUBER, Banana River
IRENE LIGHTHISER, Orlando Senior High School
SHERMAN K. SMITH, Tampa
IRMA STOCKWELL, Jackson High School, Jacksonville
IRVING C. STOVER, John B. Stetson University
J. ALBERT TRACY, John B. Stetson University

GEORGIA

GEORGE BLAIR, University of Georgia
LOUISE D. DAVISON, Davison School of Speech Correction, Atlanta
CAROLYN VANCE, University of Georgia
EDNA WEST, Georgia State College for Women

ILLINOIS

*WILLIAM W. ADAMS, Centralia Township Junior College
WILLADELL ALLEN, Maine Township High School, Park Ridge
C. C. ARENDS, Elmhurst College
G. BRADFORD BARBER, Illinois State Normal University
IVA BEETLEY, Pinckneyville Community High School
MILBURN J. BERGFALD, Libertyville High School
FRANC BERRY, J. Sterling Morton Junior College
MILDRED F. BERRY, Rockford College
MARIE E. BRITTIN, Northwestern University
CHESTER CARSON, East Junior High School, Aurora

*Cornelius C. Cunningham, Northwestern University
Department of Speech, Knox College
Department of Speech, Northern Illinois State Teachers College
*Stanley T. Donner, Northwestern University
Lloyd P. Dudley, Illinois Wesleyan University
Davis Edwards, The University of Chicago
Theodore Fuchs, Northwestern University
Madeleine Glynn, Austin High School, Chicago
Kenneth G. Hance, Northwestern University
Howard C. Hansen, MacMurray College
Martin J. Holcomb, Augustana College
Ray E. Holcombe, MacMurray College
F. Lincoln D. Holmes, Illinois State Normal University
Lee S. Hultzen, University of Illinois
Lillian Brown Ingram, Quincy Conservatory of Music
Clara E. Krefting, Bradley Polytechnic Institute
*Irving J. Lee, Northwestern University
John P. Leland, Knox College
Jean Liedman, Monmouth College
Thomas V. Liske, Quigley Preparatory School, Chicago
William D. Lucas, Northwestern University
James H. McBurney, Northwestern University
Glen E. Mills, Northwestern University
Laurence E. Norton, Eureka College
Clarence L. Nystrom, Wheaton College
Guy E. Oliver, Sr., North Central College
W. M. Parrish, University of Illinois
Georgiana M. Peacher, Northwestern University
*Paul B. Rickard, Northwestern University
Karl F. Robinson, Northwestern University
Esther L. Schwerman, Lake Forest College
Clarence T. Simon, Northwestern University
Solomon Simonson, Northwestern University
Anna May H. Smith, Barat College
George-William Smith, McCormick Theological Seminary, Chicago
Vera-Ruth L. Steinhorn, Chicago
Otis M. Walter, Jr., Oak Park
Harold Westlake, Northwestern University
Louise K. Willhour, American Conservatory of Music, Chicago
*Howard W. Wilson, Evanston Township High School
Doris G. Yoakam, Northern Illinois State Teachers College

INDIANA

W. Norwood Brigance, Wabash College
Gray Burdin, Butler University
Lucile Calvert, Butler University
W. H. Grider, Crawfordsville
*Volney Hampton, Indianapolis
*Foster Harmon, Indiana University
Esther Donna Holman, Purdue University
Alfred K. Jones, George Washington High School, Indianapolis
Orvin Larson, Indiana University
Ralph C. Lawson, Peru High School
Orville C. Miller, Purdue University
Alan H. Monroe, Purdue University
Howard C. Morgan, Earlham College
D. W. Morris, Indiana State Teachers College
*Lee Norvelle, Indiana University
*Ernest H. Reed, Indiana State Teachers College
Dorothy Benner Rieke, South Side High School, Fort Wayne
*Darrell E. Ross, Indiana University
Mary Lou Sternberg, Hammond
John S. Umble, Goshen College
Charles H. Walters, Butler University
*Melvin R. White, Indiana University
Loraine A. Wilson, New Albany Public Schools
Mildred Harter Wirt, Gary Board of Education

IOWA

A. Craig Baird, State University of Iowa
Wayne Britton, State University of Iowa
Seth A. Fessenden, Cornell College
James J. Fiderlick, Drake University
Ernest C. Fossum, Iowa State Teachers College
Wendell A. Johnson, State University of Iowa
Franklin H. Knower, State University of Iowa
Lois A. Lee, West High School, Waterloo
Thomas R. Lewis, State University of Iowa
Velma Martin, Iowa Falls Public Schools
W. Howard McIlrath, State University of Iowa
J. P. Ryan, Grinnell College
Fredrica Shattuck, Iowa State College
J. Dale Welsch, Coe College

KANSAS

*Leslie M. Blake, Municipal University of Wichita
*Lester R. Breniman, Wichita, Kansas
E. C. Buehler, University of Kansas
Allen Crafton, University of Kansas
Department of Speech, Kansas State Teachers College
Maida Dryden, Hoisington High School
George R. R. Pflaum, Kansas State Teachers College
Forest L. Whan, University of Wichita

KENTUCKY

Pearl Buchanan, Eastern Kentucky State Teachers College
Frank Fowler, University of Kentucky
Mrs. Jewell R. Jackson, Grant High School, Covington

LOUISIANA

*Elton Abernathy, Louisiana Polytechnic Institute
Jeanette O. Anderson, Louisiana State University
Robert B. Capel, Northwestern State College of Louisiana
Geraldine K. Fergen, Louisiana State University
W. F. Galloway, Baton Rouge
Giles W. Gray, Louisiana State University
Vera A. Paul, Louisiana Polythechnic Institute
Claude L. Shaver, Louisiana State University
*Harley Smith, Louisiana State University
Milton J. Wiksell, Louisiana State University
C. M. Wise, Louisiana State University
Annette L. Wood, Northwestern State College of Louisiana
John Wray Young, Centenary College

MAINE

Mark Bailey, University of Maine
Howard L. Runion, University of Maine

MARYLAND

*Paul C. Boomslitter, Goucher College
*William A. D. Millson, Kensington

MASSACHUSETTS

Boston Speech Improvement Class Teachers Association
Joseph G. Brin, Boston University

HENRY C. BRITTON, Malden
THERESA A. DACEY, Boston Public Schools
ROBERT P. FLANAGAN, Holy Cross College
MARY J. GARBER, Smith College
RUTH B. GUSTAFSON, Curry College
HELEN B. LEE, Newton High School
AGNES M. REARDON, Lynn Public Schools
DELBERT M. STALEY, The Staley College of the Spoken Word
A. FRANKLIN TRASK, Priscilla Beach Theater, Plymouth
ROBERT FORSYTHE YOUNG, Williams College

MICHIGAN

WALDO ABBOT, University of Michigan
OLLIE L. BACKUS, University of Michigan
PAUL D. BAGWELL, Michigan State College
E. WILLIAM BILTO, Wayne University
*GIFFORD BLYTON, Western Michigan College of Education
ROBERT D. BRACKETT, University of Michigan
CARL G. BRANDT, University of Michigan
DONALD O. BUELL, Michigan State College
*HAYDEN K. CARRUTH, University of Michigan
HOWARD CHENERY, Kalamazoo Central High School
EUGENE C. CHENOWETH, Central Michigan College of Education
JOHN N. CLANCY, University of Michigan
MOIREE COMPERE, Michigan State College
RUPERT L. CORTRIGHT, Wayne University
G. E. DENSMORE, University of Michigan
CLYDE W. DOW, Michigan State College
HAROLD A. DRESSEL, River Rouge Public Schools
CLARENCE H. EDWARDS, Michigan State College
LOUIS M. EICH, University of Michigan
THORRELL B. FEST, Albion College
PAUL E. GEISENHOF, Michigan State College
HARRY B. GOUGH, Albion College
JANE E. GRILLS, Alma College
HILDRED A. GROSS, Detroit Public Schools
*WILLIAM P. HALSTEAD, University of Michigan
DONALD E. HARGIS, University of Michigan
DONALD HAYWORTH, Michigan State College
BROTHER BARTHOLOMEW JOHN, De la Salle Collegiate Institute
*LYMAN S. JUDSON, Kalamazoo College
GORDON J. KLOPF, Wayne University
CARROLL P. LAHMAN, Albion College
ANNA E. LINDBLOM, Western Michigan College of Education
CHARLES W. LOMAS, University of Michigan
EDWARD J. MAJESKE, Sacred Heart Seminary, Detroit
ANNE M. MCGURK, Highland Park Junior College
J. D. MENCHHOFER, Michigan State College
MICHIGAN ASSOCIATION OF TEACHERS OF SPEECH
WILBUR E. MOORE, Central Michigan College of Education
LUCIA M. NESOM, Michigan State College
CECIL H. NICKLE, Michigan State College
WINIFRED OPGRANDE, Johnston High School, Bessemer
DAVID OWEN, University of Michigan
MEREL PARKS, Detroit Public Schools
WILLIAM M. PITKIN, Michigan State College
WILFERD P. RAYNER, Jackson Junior College
FOREST A. ROBERTS, Northern Michigan College of Education
PRESTON H. SCOTT, Wayne University
RAY E. SKINNER, Wayne University
MARJORIE G. SMITH, Cass Technical High School, Detroit
*BURDETTE STAMPLEY, Michigan State College
MARION F. STOWE, Michigan State Normal School

MINNESOTA

ELIZABETH G. ANDERSCH, State Teachers College, Bemidji
ROSELIA A. BARGEN, Albert Lea High School
LUCY MAE E. BERGMAN, University of Minnesota
DELWIN B. DUSENBURY, University of Minnesota
HOWARD GILKINSON, University of Minnesota
MARY WEHE HUBER, University of Minnesota
RALPH G. NICHOLS, University of Minnesota
MARY GWEN OWEN, Macalester College
FRANK M. RARIG, University of Minnesota
WILLIAM SMILEY HOWELL, University of Minnesota
CHARLES S. TEMPLER, Hamline University

MISSISSIPPI

FREDERIC O. CRANDALL, Mississippi State College for Women

MISSOURI

BOWER ALY, University of Missouri
DONALD C. BRYANT, Washington University
IRENE COGER, Southwest Missouri State Teachers College
CARL A. DALLINGER, Park College
*PAUL DAVEE, Christian College
MILDRED E. DAVIS, Cabool High School
DEPARTMENT OF SPEECH, Southeast Missouri State Teachers College
JEAN CONYERS ERVIN, University of Missouri
ELEANOR GASPAROVICH, St. Louis
ELSIE M. HOBELMAN, St. Louis Public Schools
RALPH C. LEYDEN, Stephens College
FRANCINE MERRITT, University of Missouri
ELIZABETH MORSE, Morse School of Expression, St. Louis
FRANK L. PAGE, William Woods College
JOAN PATTERSON, Washington University
DAVID C. PHILLIPS, Stephens College
LOREN D. REID, University of Missouri
RUTH KELSO RENFROW, Washington University
FORREST H. ROSE, Southeast Missouri State Teachers College
JOSEPHINE SIMONSON, Stephens College
WAYNE N. THOMPSON, University of Missouri
LOLA CAROLYN WALKER, Central College
WESLEY WIKSELL, Stephens College
MARGARET WOOD, Stephens College
*ELIZABETH WORRELL, Central College

NEBRASKA

*DAVID M. GRANT, Hastings College
LEROY T. LAASE, University of Nebraska
EVELYN R. BOWMAN KENNCHAN, Lincoln
MABEL L. RASMUSSEN, South High School, Omaha

NEW HAMPSHIRE

JOSEPH D. BATCHELLER, University of New Hampshire
EDMUND A. CORTEZ, University of New Hampshire
WILLIAM TRUFANT FOSTER, Jaffrey
*RAY E. KEESEY, University of New Hampshire
EVELYN H. SEEDORF, Colby Junior College
J. A. WINANS, Dartmouth College

NEW JERSEY

ALICE HELFGOTT, Department of Speech Education, Newark

WILBUR S. HOWELL, Princeton University
DARREL J. MASE, New Jersey State Teachers College, Trenton
ANNA R. NELSON, New Jersey College for Women
RICHARD C. REAGER, Rutgers University
J. WALTER REEVES, The Peddie School
CARLETON E. SAUNDERS, JR., Nutley High School
IDA TAPLIN, Newark Public Schools
RUTH THOMAS, Passaic Public Schools
FRANCES B. TIBBITS, Newark Public Schools

NEW YORK

AGNES ALLARDYCE, Syracuse University
SARAH M. BARBER, (formerly) Richmond Hill High School
WYNETT BARNETT, Syracuse University
KENNETH G. BARTLETT, Syracuse University
*WILLIAM AUBURN BEHL, Brooklyn College
JACK E. BENDER, New York University
ELLA M. BRAUNLICH, Supplementary School for Lip Reading and Speech Correction
GLORIA BRENER, Brooklyn
JOHN MARK BROPHY, Evander Childs High School
HAZEL P. BROWN, New York City
ROSE C. BROUGHTON, Ithaca College
DALE CARNEGIE, Forest Hills, New York City
D. J. CARTY, Manhattan College
JOHN CATHEY, Feagin School of Dramatic Art
RALH DE S. CHILDS, Cooper Union
HELEN HAKE CLUTTON, Yonkers School Eight
BROTHER C. CORNELIUS, La Salle Academy
THOMAS E. COULTON, Brooklyn College
ANNETTE LUCILLE CUSACK, John Adams High School
KENNETH DAMON, College of the City of New York
OLIVE BURCH DAVIS, Hunter College High School
MARIE C. DELORENZO, The DeLorenzo Studio of Speech and Drama, Schenectady
MILTON DICKENS, Syracuse University
ORMOND J. DRAKE, New York University
A. M. DRUMMOND, Cornell University
MELBA HURD DUNCAN, Brooklyn College
LEONARD FINLAN, New York University
JACOB F. FOSTER, Brooklyn College
CHARLES A. FRITZ, New York University
J. V. GARLAND, Colgate University
WILBUR E. GILMAN, Queens College
GEORGE M. GLASGOW, Fordham University
EILEEN S. GRABSON, New York City
JAMES S. GREENE, National Hospital for Speech Disorders
WILLIAM K. HARDING, Albany
HARRY J. HELTMAN, Syracuse University
MRS. SARAH M. W. HUNTLEY, Bay Ridge High School, Brooklyn
C. BISHOP JOHNSON, A. B. Davis High School, Mt. Vernon
MARGUERITE E. JONES, Hunter College
KATHRYN KIRK, Rochester Public Schools
MAGDALENE KRAMER, Columbia University
*JOSEPH A. KUHN, Long Beach High School
AZUBAH J. LATHAM, (formerly) Columbia Univ.
GARRETT H. LEVERTON, New York City
ELEANOR M. LUSE, Wells College
DOROTHY V. MACKINNON, New York City
LOUIS A. MALLORY, Brooklyn College
WILLARD B. MARSH, Hamilton College
MARY T. MCGRATH, New Utrecht High School
WALTER J. MCGRAW, JR., N.B.C., New York City
ROSLYN I. MENDELL, Better English School, New York City
GERALDINE MORROW, Elmira College
DOROTHY I. MULGRAVE, New York University
LILLIAN M. O'CONNOR, Grover Cleveland High School, Ridgewood
ROBERT T. OLIVER, Syracuse University
J. M. O'NEILL, Brooklyn College
NENAH B. OSTROM, East View Junior High School, White Plains
CULLEN B. OWENS, Cornell University
CLARENCE A. PETERS, The Town Hall, Inc.
MARY PIATOFF, Rhodes School, New York City
LETITIA RAUBICHECK, New York City Schools
GEORGE P. RICE, JR., Columbia University, Trinity College
WALTER O. ROBINSON, St. John's University
LOUSENE ROUSSEAU, New York City
MRS. OTWAY THOMAS SCHELL, New York City
JOSEPH T. SCHLESINGER, New York City
ARTHUR SCHOLTEN, New York University
RALPH N. SCHMIDT, SR., Syracuse University
GUSTAV F. SCHULZ, College of the City of New York
ARTHUR E. SECORD, Brooklyn College
FRANCES M. SEGEL, The Nitchie School of Lip Reading
LORETTA WAGNER SMITH, Brooklyn College
MARY NOBLE SMITH, Cortland State Teachers College
MILTON SMITH, Columbia University
JANE BLISS TAYLOR, Hunter College
WILLIAM J. TEMPLE, Brooklyn College
LESTER THONSSEN, College of the City of New York
RUSSELL H. WAGNER, Cornell University
H. A. WICHELNS, Cornell University
*WALTER H. WILKE, New York University
ARLEIGH B. WILLIAMSON, New York University
JOAN BETTE WILLS, New York City
ANNETT WOLTER, The Annett Wolter School of Speech and Drama
JANE DORSEY ZIMMERMAN, Columbia University

NORTH CAROLINA

PAUL H. NEAL, Belmont Abbey College
EDWIN H. PAGET, North Carolina State College

NORTH DAKOTA

EDNA GILBERT, State Teachers College, Minot
*JOHN S. PENN, University of North Dakota
E. D. SCHONBERGER, University of North Dakota
*LLOYD L. WIGHTMAN, Fargo Senior High School

OHIO

*J. JEFFREY AUER, Oberlin College
*MORLIN BELL, University of Toledo
AMY BISHOP, Western Reserve University
JOHN W. BLACK, Kenyon College
WILLIAM C. CRAIG, The College of Wooster
LIONEL CROCKER, Denison University
NAOMI CROWE, Martins Ferry High School
BERT EMSLEY, Ohio State University
E. GERALDINE GARRISON, Western Reserve University
WALTER M. GEIGER, Newton Falls High School
ELEANORE R. GILES, Steubenville High School
*WARREN GUTHRIE, Western Reserve University
JANIS HALLIDAY, York Township School, Bellevue
MARIAN HASCHKE, Clyde High School
JAMES N. HOLM, Kent State University
R. C. HUNTER, Ohio Wesleyan University
GRACE E. INGLEDUE, Findlay
EVELYN KENNESSON, Bowling Green State University
V. A. KETCHAM, Ohio State University
VINCENT S. KLEIN, Mary Manse College
A. C. LAFOLLETTE, Ohio University
CHARLES LAYTON, Muskingum College
RUTH A. LEAVENGOOD, Coshocton High School

RUTH LUNDIN, Western Reserve University
GEORGE A. MCCALMON, Western Reserve University
*WILLIAM B. MCCOARD, Western Reserve University
HORTENSE MOORE, Miami University
CATHERINE MORRIS, Nelsonville High School
*ELBERT R. MOSES, JR., Ohio State University
VIRGINIA S. SANDERSON, Ohio State University
JOHN F. SMITH, Otterbein College
L. C. STAATS, Ohio University
E. TURNER STUMP, Kent State University
*WILLIAM M. TIMMONS, Ohio State University
EARL W. WILEY, Ohio State University
HARRY M. WILLIAMS, Miami University
W. HAYES YEAGER, Ohio State University

OKLAHOMA

EARL E. BRADLEY, Panhandle Agricultural and Mechanical College
HERBERT L. CURRY, University of Tulsa
DEPARTMENT OF SPEECH, Oklahoma Agricultural and Mechanical College
VIVIAN DOWNS, Durant Public Schools
MARGARET V. ECKHART, Borden General Hospital
*GRANT FAIRBANKS, Borden General Hospital
CHARLES P. GREEN, University of Oklahoma
BETTY HASKELL, University of Oklahoma
D. T. MARTIN, Oklahoma Agricultural and Mechanical College
MRS. HAL WOODS, Oklahoma County Health Association

OREGON

ROBERT D. CLARK, University of Oregon
*ROBERT B. HUBER, University of Oregon
CLAUDE E. KANTNER, University of Oregon Medical School
R. D. MAHAFFEY, Linfield College

PENNSYLVANIA

PAUL R. BEALL, Pennsylvania State College
ABIGAIL C. BOARDMAN, State Teachers College, Indiana
A. T. CORDRAY, Westminster College
JOHN DOLMAN, JR., University of Pennsylvania
JOHN FRIZZELL, Pennsylvania State College
RUTH R. HAUN, University of Pittsburgh
*MARY HENDERSON, Bryn Mawr College
GORDON F. HOSTETTLER, Temple University
HELEN IRWIN, Steton Hill College
JOSEPH F. O'BRIEN, Pennsylvania State College
PENNSYLVANIA SPEECH ASSOCIATION
CLAYTON H. SCHUG, Pennsylvania State College
EDITH WARMAN SKINNER, Carnegie Institute of Technology
*BUELL B. WHITEHILL, JR., University of Pittsburgh
M. THELMA ZUTAVERN, Devereaux Schools, Devon

SOUTH CAROLINA

*HAZEL B. ABBOTT, Converse College

SOUTH DAKOTA

KENNETH CHRISTIANSEN, University of South Dakota
WARREN M. LEE, University of South Dakota
CORALEE GARRISON P'POOL, Southern State Normal

TENNESSEE

JOSEPHINE ALLENSWORTH, Memphis City Schools
CAROLYN BINKLEY, East Nashville High School
*HARRY B. DAVIS, Southwestern
EARL HOBSON SMITH, Lincoln Memorial University
GEORGE TOTTEN, Southwestern
CATHARINE WINNIA, Ward-Belmont School

TEXAS

EARL C. BRYAN, Texas State College for Women
DOROTHY E. COATS, Beaumont Senior High School
JACK E. DOUGLAS, West Texas State Teachers College
*CONRAD FREED, West Texas State Teachers College
WILHELMINA G. HEDDE, Adamson High School, Dallas
P. MERVILLE LARSON, Texas College of Arts and Industries
SARA LOWREY, Baylor University
ANNAH JO PENDLETON, Texas Technological College
WILBUR FREDRIC PLETTE, MacMurray College
*THOMAS A. ROUSSE, University of Texas
*HUGH F. SEABURY, Southwest Texas State Teachers College
ANGUS SPRINGER, Southwestern University
*F. LOREN WINSHIP, University of Texas

UTAH

RUTH M. CLARK, Salt Lake City Public Schools
T. EARL PARDOE, Brigham Young University
JOSEPH F. SMITH, University of Utah

VIRGINIA

H. HADDON DUDLEY, Jefferson High School, Roanoke
AINSLIE HARRIS, Madison College
LISA RAUSCHENBUSCH, Sweet Briar College
*PAUL J. RITTER, Mary Washington College
*ARGUS TRESIDDER, Madison College
KARL R. WALLACE, University of Virginia

WASHINGTON

*ORVILLE L. PENCE, University of Washington
HORACE G. RAHSKOPF, University of Washington

WEST VIRGINIA

BLANDINA A. FOSTER, Bethany College
J. H. HENNING, University of West Virginia
SANFORD G. WHEELER, Marshall College

WISCONSIN

AMY ALLEN, University of Wisconsin
QUINTILLA ANDERS, Madison
*MARTIN P. ANDERSON, University of Wisconsin
GLADYS L. BORCHERS, University of Wisconsin
ANNA M. CARR, Milwaukee State Teachers College
MARY CRYAN, Racine Public Schools
W. E. DONNELLY, Washington High School, New London
MARCELINE ERICKSON, The Stout Institute
H. L. EWBANK, University of Wisconsin
MATILDA E. GEIL, South Division High School, Milwaukee
ANGELA GREBEL, East Side High School, Madison
HUGO E. HELLMAN, Marquette University
E. M. KINNEY, Madison
RAYMOND H. MYERS, Milwaukee Center, University of Wisconsin
CARRIE RASMUSSEN, Longfellow School, Madison
MARION ROBINSON, University of Wisconsin
EDWIN W. SCHOENBERGER, Lawrence College
A. T. WEAVER, University of Wisconsin
ROBERT W. WEST, University of Wisconsin
CHARLES W. ZOECKLER, Shorewood Community Auditorium

WYOMING

WILLIAM H. GONDER, Sheridan
*DEAN G. NICHOLS, University of Wyoming

PUERTO RICO

CHARLOTTE E. CLEELAND, University of Puerto Rico, Rio Piedras

C/O POSTMASTER

*ROBERT W. JENSEN
*CARL S. JOHNSON

NATIONAL

ALPHA PSI OMEGA (National Honorary Dramatic Society)
DELTA SIGMA RHO (National Forensic Society)
MASQUE AND GAVEL (National Honorary High School Speech Society)
NATIONAL FORENSIC LEAGUE (High School Honor Society)
NATIONAL THESPIAN DRAMATIC HONOR SOCIETY FOR HIGH SCHOOLS
OMEGA UPSILON (National Professional Speech and Dramatic Sorority)
PHI BETA (National Professional Fraternity of Music and Dramatic Art)
PI KAPPA DELTA (National Honorary Forensic Society)
ZETA PHI ETA (National Professional Speech Fraternity for Women)

EDITOR'S NOTE

With the publication of this, the twelfth volume of SPEECH MONOGRAPHS, the present editor begins his second term of office. It is not inappropriate, therefore, to restate the character of the studies published here and to report briefly on recent and impending changes.

As wisely established by the first editor in the first issue, the criteria by which a study submitted for publication in this journal is mainly judged are: (1) is it news to scholars in the field of speech? and (2) does it use sound, scientific, scholarly, method? It is, perhaps, unnecessary to add that such studies must be significant news, that they must be in the field of speech and drama, and that they must be clearly and concisely reported.

The present issue, too, marks certain innovations which may well be noted. First is the publication of Knower's "Combined Index of Reports of Graduate Work in the Field of Speech and Dramatic Art—XII, 1902-1944," which, it is to be hoped, will become a decennial feature. Next, the editor has undertaken to increase the work and responsibility of the associate editors, giving each almost full autonomy in his sphere. Manuscripts are to be sent to the editor, as hitherto, however, and the final responsibility rests with him, as before. Lastly, the policy of encouraging the contribution of studies of full monograph length has been adopted.

The present editor's past term of three years has been a very difficult one. Uncertain and inexperienced, he was early confronted with a rapidly decreasing supply of superior studies, the natural result of the war. Without the very generous and active assistance of many persons, especially the editor's colleagues, the associate editors, the directors of research in speech, the Business Manager and other officers of the National Association of Teachers of Speech, and the former editor of SPEECH MONOGRAPHS, the publication of this and the two preceding issues would have been impossible.

With the end of the war and the return of scholars to peaceful pursuits, more and better research studies may be expected. The active cooperation of all in the field of speech is indispensable, however, if our research publication is to maintain the high standards that should be set in normal times.

Those who have studies of merit, whether directed or independent, in the field of speech, or who know of such studies, are urged to bring them to the attention of the editor. A leaflet entitled "Suggestions to Contributors to SPEECH MONOGRAPHS" will be supplied on request.

The Editor

SPEECH MONOGRAPHS

VOLUME XII RESEARCH ANNUAL 1945

GRADUATE THESES— AN INDEX OF GRADUATE WORK IN THE FIELD OF SPEECH—XI*

FRANKLIN H. KNOWER
State University of Iowa

SECTION I

THERE are 166 graduate degrees in speech and dramatic art reported here for the first time in this series. All but fourteen were granted in 1944. The report involves 149 masters' degrees and seventeen doctors' degrees. Seventy-five of the masters' degrees were with a thesis. Thirteen masters' thesis titles and one doctors' thesis title are reported for previous years. Sixty-two masters' with thesis and sixteen doctors' degrees were granted in 1944. These titles together provide a list of ninety-two titles for this report. The total number of theses titles reported is now 2,526, of which 2,207 are for masters' and 319 are for doctors' degrees. There have been 2,158 masters' degrees granted without requirement of a thesis. The total number of graduate degrees in speech and dramatic art for which we now have a record is 4,684.

Table I indicates the institution granting these degrees, with separate tabulations for the degrees granted before and during 1944, and for the various major types of degrees. The degrees of Colorado State Teachers College which now grants both the master's and doctor's degrees, are reported for the first time in these lists. This report records a continued decrease in the number of graduate degrees granted, although a substantial number of degrees are still involved.

Table II contains a rough classification of the apparent main concern of the theses. In this classification each title is classified only once. The relative interests in the several fields remains fairly constant. Although there are some minor variations among classifications, the writer does not consider the sample sufficient, or the times appropriate, to draw reliable conclusions about change in trends of interest within the field.

Section II of this report contains a list of theses titles alphabetically arranged by institutions granting the degree, and by type of degree and individual name within each institution. Section III contains an index of the titles appearing in this report. The index classifies the theses into six main areas and into many sub-classifications within each area. Many titles are indexed in more than one area and sub-classification.

*The continued cooperation of department administrators in the institutions providing data for these reports is gratefully acknowledged.

TABLE 1

INSTITUTIONAL SOURCES OF DEGREES GRANTED (1944 DEGREES IN PARENTHESES)

	Masters' Degrees				Doctors' Degrees		Combined Total
	With Theses	Without Theses		Total			
Akron		2		2			2
Alabama		17	1	18			18
Baylor University		7		7			7
Brooklyn College		17		17			17
Carnegie Institute		11		11			11
Colorado State Teachers College		12		12		1	13
Columbia University Teachers College		5	(18) 802	807	(2)	34	841
Cornell University	(1)	136	7	143	(3)	44	187
Denver	(6)	65		65	(1)	1	66
George Washington		2		2			2
Grinnell		1		1			1
Hawaii	(1)	6		6			6
Illinois, University of	(4)	19		19			19
Indiana University	(1)	12		12			12
Iowa, State University of	(7)	497		497	(3)	67	564
Louisiana State University	(2)	86		86		16	102
Marquette University	(1)	33		33			33
Michigan State	(4)	9		9			9
Michigan, University of	(16)	90	(2) 502	592	(1)	33	625
Mills College		2	1	3			3
Minnesota, University of		50	6	56		5	61
Missouri University	(2)	16		16			16
New Mexico Normal		8		8			8
Northwestern University	(1)	251	(25) 269	520		22	542
Ohio State University	(2)	48		48	(1)	5	53
Ohio University	(2)	10		10			10
Ohio Wesleyan		26		26			26
Oklahoma A. and M.		1		1			1
Oklahoma University	(1)	15		15			15
Pennsylvania State		17		17			17
Purdue University	(1)	10	5	15			15
Redlands, University of		3		3			3
South Dakota, University of		7		7			7
Southern California, University of		158	(6) 309	467	(1)	19	486
Stanford University	(2)	36		36		1	37
Syracuse University		19	2	21	(1)	2	23
Utah, University of		21		21			21
Washington State College		10		10			10
Washington, University of	(4)	81		81			81
Wayne University	(1)	42	(7) 24	66			66
Western Reserve University		1	(4) 98	99			99
West Texas State College		4		4			4
Wisconsin, University of	(3)	287	(7) 17	304	(2)	58	362
Yale University		57	(5) 115	172	(1)	11	183
Totals	(62)	2,207	74 2,158	4,365	16	319	4,684

TABLE II

THESES CLASSIFIED BY SUBJECT MATTER

		Previous Lists	New List	Total
Fundamentals	Masters'—Number	279	10	289
	Per Cent	13.09	13.40	13.09
	Doctors'—Number	64	4	68
	Per Cent	21.19	23.60	21.32
Public Address	Masters'—Number	311	6	317
	Per Cent	14.59	8.00	14.38
	Doctors'—Number	90	3	93
	Per Cent	29.80	17.60	29.15
Oral Reading	Masters'—Number	83	0	83
	Per Cent	3.89		3.76
	Doctors'—Number	1	1	2
	Per Cent	.33	5.90	.63
Dramatics	Masters'—Number	883	29	912
	Per Cent	41.42	38.70	41.36
	Doctors'—Number	67	6	73
	Per Cent	22.19	35.30	22.88
Speech Defects	Masters'—Number	194	11	205
	Per Cent	9.10	14.70	9.30
	Doctors'—Number	33	0	33
	Per Cent	10.93		10.34
Education	Masters'—Number	363	19	382
	Per Cent	17.03	25.20	17.32
	Doctors'—Number	43	3	45
	Per Cent	14.24	17.60	14.11
Miscellaneous	Masters'—Number	19		19
	Per Cent	.89		.86
	Doctors'—Number	4		4
	Per Cent	1.32		1.25

SECTION II

TITLES

COLORADO STATE COLLEGE OF EDUCATION

1934

M.A. Theses

2435. Blagen, Dora D., The Correction of Faulty Speech Habits of High School Sophomores.

1935

2436. Case, Keith E., A Text-book in Elementary Debate.

2437. DeBoer, Holle G., A Workbook in Elementary Debate.

1939

2438. Chapp, Evelyn, Original Plays for Children.

2439. Schoberlin, Melvin H., From Candles to Footlights: A Chronicle of the Territorial Theatre of Colorado.

1940

2440. Knapp, William Jennings, A Comparative Study of the Effect of Two Types of Projects in Speech Education on the Development of Speech Personality.

2441. Wiest, Donald K., Creative Art Expression Through the Study of Modern Stage Design.

1941

2442. Potter, Ione, A Survey of Speech Defects in the Portales, New Mexico, Elementary and Junior High Schools.

1942

2443. Carlile, Clark S., A Survey of Mispronunciations of High School Students of Salina, Kansas.

2444. Day, Myrle, The History of the Theatre of Chicago.

2445. Harms, Lillian, The Creative-Educative Possibilities of Stage-Craft in the Senior High School.

1943

2446. Carlile, Sene R., A Study of the Conversational Difficulties of the Students of the Scott City, Kansas, High School.

Ph.D. Thesis

2447. Kramer, John H., The Speaking Situations Which Secondary School Pupils Meet with the Greatest Frequency; A Determination and Evaluation of the Materials and Activities Used in Teaching Speech; and The Speech Activities for Which the High School Should Provide Instruction Based on the Opinions of

Students, Teachers, Recent Graduates, and Adults.

COLUMBIA UNIVERSITY—TEACHERS COLLEGE

1944

Ph.D. Theses

2448. Carp, Bernard, A Study of Certain Factors on a Speech Judgment.

2449. Vergara, Allys, A Critical Study of a Group of College Women's Responses to Poetry.

CORNELL UNIVERSITY

1944

M.A. Thesis

2450. Carlson, Genevieve Marguerite, Modern Poetic Drama.

Ph.D. Theses

2451. Dudley, Leonea Barbour, The Language of Comedy; An Introductory Analysis of the Verbal Forms of the Comic Spirit in Drama.

2452. Dunham, Richard Roy, The Birth of the Modern Theatre.

2453. Miller, Joseph William, Working Methods of Modern Playwrights.

UNIVERSITY OF DENVER

1944

M.A. Theses

2454. De Roo, Edward, Original Play, "Go West Young Man."

2455. Dunklee, Dorcus Mary, Original Play, "Her Children Arise."

2456. Murphy, Delphine, A Project Using Music, Drama, Pantomime in Developing Rhythmic Sensitivity and Expression, Adapted to the Lower Grades.

2457. Petty, Mary D., A Survey of the Teaching of Speech in the Kansas High Schools During 1943-1944.

2458. Smith, Eugene D., A Comparison of the Concentration During Speaking of Superior and Inferior Speakers.

2459. Weeks, Edna Mae, A Palatographic Study of the Mid-Western "r".

Ph.D. Thesis

2460. Welsch, James Dale, A Proposed Reorganization of the Department of Speech and Dramatic Arts at Coe College, Cedar Rapids, Iowa.

UNIVERSITY OF HAWAII

1944

M.Ed. Thesis

2461. Abe, Keith Shogo, A Study of Attitudes of Pupils in Kohala High and Elementary School Toward Speech Improvement.

UNIVERSITY OF ILLINOIS

1944

M.A. Theses

2462. Bolman, Paul, An Attempt to Define a Normal Speech Pattern.

2463. Powers, Sister Mary Rose, Personality Traits of Junior High School Stutterers As Measured by the California Test of Personality.

2464. Swengel, Beulah, Audiometric Analysis of Hard of Hearing Children as Related to the Problem of Retardation.

2465. Walter, Marjorie, The Role of Heredity in Dysphemia Among Monozygotic and Dizygotic Twins.

INDIANA UNIVERSITY

1944

M.A. Thesis

2466. Hall, Frances Lee, Arch Oboler, Radio Dramatist.

STATE UNIVERSITY OF IOWA

1944

M.A. Theses

2467. Buckner, Elizabeth A., Analysis and Interpretation of Certain Major Roles, A Study in Acting.

2468. Burns, Kenneth Merwin, An Experimental Study of a Recorded Test of Pronunciation at the High School Level.

2469. Holland, Robert Tevis, The American Negro Theatre: A Development of and Reaction Against the Minstrel Concept.

2470. Hull, Norma Esther, Some Negro Playwrights.

2471. Mitchell, Betty, A High-Spot Study of Policies and Practices in University and Community Theatres.

2472. Thompson, Isabel C., Functions of the Director in Educational and Community Theatres.

2473. Wood, Edgar S., The History and Interpretation of Three Different Major Acting Roles.

Ph.D. Theses

2474. Anderson, Dorothy Iola, Edward T. Channing's Philosophy and Teaching of Rhetoric.

2475. Harrington, Ernest Robert, A Study of the Mechanism of Velopharyngeal Closure.

2476. Nelson, Theodore Franklin, Charles Haddon Spurgeon's Theory and Practice of Preaching.

LOUISIANA STATE UNIVERSITY

1944

M.A. Theses

2477. Reed, Max Rodney, Some Relationships Between Audiometer Ratings and Speech Sound Discrimination Ratings.

2478. White, Eugene Edmond, The Speaking of James K. Vardaman in the Mississippi Gubernatorial Campaign of 1903.

MARQUETTE UNIVERSITY

1944

M.A. Thesis

2479. Schott, Adell Margarette, Stephen A. Douglas, A Tragedy in Three Acts Prefaced by a Biographical Analysis.

MICHIGAN STATE COLLEGE

1944

M.A. Theses

2480. Chase, Eleanore Sarah, A Budget Plan for the Purchase and Construction of Stage Scenery and Lighting Equipment for the Small High School.

2481. Richards, James Kenneth, The Speech Department of the College and University in War Time.

2482. Robinson, Marie J., The Production and Director's Manual of *Then It Was Summer*, an Original Play by Albert Johnson.

2483. Tallmadge, Leonore, A Survey of Educational Radio Stations.

UNIVERSITY OF MICHIGAN

1944

M.A. Theses

2484. Adkins, Fawn Bea, Pioneer Costumes in Oklahoma.

2485. Ard, Saradell, Modernism in Stage Scenery as Compared with Modernism in the Field of Painting.

2485. Beard, Jeannette E., Influence of Maternal Age and Birth Order on the Production of Speech Defective Children.

2487. Decker, Mary Elizabeth, Relation of Vowel Frequency to Pedagogical Representation in Early Readers.

2488. Edwards, Genevieve, The Theatre at War: 1939-42.

2489. Gallagher, Betty, Phases of the Stanislavsky Method of Acting as Taught by Maria Ouspenskaya.

2490. Hegwood, Vivian E. T., A Study of Style in Representative Speeches of President Franklin D. Roosevelt.

2491. Hess, Doris, A Production Prompt Book for *The Importance of Being Ernest.*

2492. Hoelzle, Virginia Mae, The Physical Conditions of the American Theatre of the Eighteenth and Nineteenth Centuries.

2493. Jones, Ellen Elizabeth, A Study of the Consonant Combinations Existing in the Vocabulary of the Normal Child.

2494. Keener, Marjorie, Rosalind on the Stage.

2495. Neff, Dorothy Fern, Typical Problems in the Teaching of Acting on the High School Level.

2496. Russell, Vera Kathryn, A Critical Analysis of William Gillette's Influence on the Theatre (Including Production Notes on *Secret Service.*)

2497. Slack, Mary Gertrude, A Study of Minnie Maddern Fiske and Her Contributions to the American Theatre.

2498. Smith, Neil Gibson, Vowel and Consonant Sounds in the Vocalization of an Infant During the First Six Months of Life.

2499. Tobin, Patricia Eleanor, A Production Prompt Book for *She Stoops to Conquer*, by Oliver Goldsmith.

Ph.D. Thesis

2500. Hargis, Donald Erwin, A Study of the Vocabulary of Radio.

UNIVERSITY OF MISSOURI

1944

M.A. Theses

2501. Lea, Mary Frances, Public Speaking in Missouri During the Civil War.

2502. Miles, Audrey Williams, Public Speaking in Missouri.

NORTHWESTERN UNIVERSITY

1944

M.A. Thesis

2503. Harvey, Francis, Comparison of the Principles of Psycho-analysis and Individual Psychology Applied to the Treatment of Stuttering by Some German Psychologists.

OHIO STATE UNIVERSITY

1944

M.A. Theses

2504. Dew, Marjorie, A Study of Progress in Visual Hearing.

2505. White, Margaret Ann, A Critical Evaluation of Some Existing Articulation Tests and the Formulation of a Practical Brief Test for Entering Students.

Ph.D. Thesis

2506. Riley, Donald W., A History of American Radio Drama from 1919 to 1944.

OHIO UNIVERSITY

1944

M.A. Theses

2507. Cook, Margaret Laverty, Two Original One-act Plays Based Upon Events in Rome Township, Athens County, Ohio.

2508. Quigley, Laura Leota, A Proposed Speech Program for Berry College, Mount Berry, Georgia.

UNIVERSITY OF OKLAHOMA

1944

M.A. Thesis

2509. Grantham, Frances Eudean, Oral Reading in The General Reading Program in the Secondary School.

PURDUE UNIVERSITY

1944

M.A. Thesis

2510. Stranburg, Mary Elizabeth, A Study of Audience Attitudes Toward a Practice Before and After Seeing a One-act Play.

UNIVERSITY OF SOUTHERN CALIFORNIA

1944

Ph.D. Thesis

2511. Baxter, Batsell Barrett, An Analysis of the Basic Elements of Persuasion in the Yale Lectures on Preaching.

STANFORD UNIVERSITY

1944

M.A. Theses

2512. Sievers, Wieder David, The Group Theatre of New York City, 1931-1941.

2513. Sinclair, Alice Aileen Higgins, Speech Melody; An Analysis.

SYRACUSE UNIVERSITY

1944

Ph.D. Thesis

2514. Garland, Jasper V., Certain Phases of the Composition of Personality as Studied by the Teleonomic Method and Matching Technique Applied to the Verbal Performance of Ten Public Speakers.

UNIVERSITY OF WASHINGTON

1943

M.A. Theses

2515. Prall, Caleb, A Study of the Methods of Persuasion in Selected Speeches Delivered by Isaac Ingalls Stevens.

1944

2516. Baskerville, Barnet, A Study of Winston S. Churchill as an Opposition Speaker During the Years from 1932 to 1938.

2517. Daubenspeck, Ruth Marjorie, An Experimental Study of Two Hundred and Thirty-seven Primary Grade School Children with a Phonographic Screening Test.

2518. Groth, Iola Brown, An Experimental Study of Two Hundred and Five College Students with a Phonograph Administered Group Hearing Test.

2519. Method, Ethel, An Analytical Comparison and Evaluation of the Speech Tournament and Speech Festival According to Sound Educational Objectives.

WAYNE UNIVERSITY

1944

M.A. Thesis

2520. McCracken, John W., The Status of Religious Education by Radio.

UNIVERSITY OF WISCONSIN

1944

M.A. Theses

2521. Honig, Phoebe, Psychotheraphy by Means of Dramatic Technique.

2522. Yaeger, Vivian Vincent, Voice Training by Means of the Drama.

Ph.M. Thesis

2523. Hurley, Ardis Dawn, A Rationale For the Teaching of the Deaf and Hard of Hearing.

Ph.D. Theses

2524. Boardman, Abigail Casey, A Study of Revivals of Plays in the New York City Theatres from 1925 to 1940.

2525. Whitehead, Albert Edward, The Oratorical Career of William Edgar Borah.

YALE UNIVERSITY

1944

Ph.D. Thesis

2526. Cooke, Anna Margaret, An Analysis of the Acting Styles of Garrick, Siddons, and Edmund Kean in Relation to the Dominant Trends in Art and Literature of the Eighteenth Century.

SECTION III

INDEX

FUNDAMENTALS

Activities: Conversation 2446; Useful in speech education 2447*

Action: Teaching 2456

Audience: Response to poetry 2449*; Theatre 2510

Content and Structure: Persuasion in 2511*; Style 2486

Language: Vocabulary 2500*

Personality: Attitudes 2461; Composition of 2514*; Concentration of 1458; Development 2440, 2521; Stutterer's 2463

Phonetics: Articulation test 2505; Consonants 2459, 2493, 2498; Midwestern "r" 2459; Pronunciation 2403, 2469; Vowels 2494; Vowel frequency 2487

Voice: Anatomy 2475*; Melody 2513; Patterns 2462; Training by drama 2522

PUBLIC SPEAKING

History: In Missouri 2501, 2502

Homiletics: Spurgeon on 2470*; Yale lectures on 2511*

Orators: Borah 2525*; Churchill 2516; F. D. Roosevelt 2490; Isaac I. Stevens 2515; Vardaman 2478

ORAL READING

Response to poetry 2449*; In secondary schools 2509

RADIO

Dramatics in 2506, 4266; Educational station 2483; History of radio drama 2506; Religious education by 2520; Vocabulary 2500*

DRAMATICS

Actors: Fiske 2497; Garrick 2526; Wm. Gillette 2496; Kean 2526; Rosiland 2494; Siddons 2526

Acting: Analysis of 2467, 2473; Stanislavsky 2489; Teaching 2495

Audience: Attitudes of 2510

Community: Children's plays 2438; Directors in 2472; In New York 2512; Survey of 2471

Costumes: Of Oklahoma 2482

Criticism: Modern poetic drama 2450

Directors-Producers-Playwrights: Wm. Gillette 2496; Methods 2453; Negro drama 2469, 2470

History of the Theatre in America: Chicago 2444; Colorado 2439; The negro in 2469, 2470; In Oklahoma 2484; Physical condition of 2492; Revivals 2524*

Plays: Comedy 2451*; Originals 2438, 2454, 2455, 2479, 2499, 2507

Prompt Books - Productions - Interpretations: *The Importance of Being Ernest* 2491; *She Stoops to Conquer* 2499; *Then It Was Summer* 2482

Stage Design: Creative 2441; Modernism in 2485; Scenery and 2480

SPEECH PATHOLOGY

Analysis: Age and birth order 2486

Hearing: Audiometer tests 2477; Retardation and 2464; Teaching the deaf 2523; Tests 2477, 2517, 2518; Visual 2504

Stutterers: Personality 2463; And twinning 2465, Psychology of 2503

Surveys: In Portales, New Mexico 2442

Therapy: By psychodrama 2521; For speech habits 2435

EDUCATION

Analysis: Frequency of speech activities 2447*

Activities: Frequency of 2447*; Speech tournaments 2519

Books-Manuals-Syllabi: Debate 2436, 2437

College: Berry College curriculum 2508*; Coe College curriculum 2460*; And the war 2481

Debate and Discussion: Text-books 2436; Workbook 2437

Radio: Educational 2500; Stations 2483

Methods: Channing's 2474*; Creative dramatics 2445; Of expression 2456; Personality 2440; Voice training in drama 2522

Secondary School: Acting 2495; In correction 2435; In conversation 2446; Dramatic 2445, 2522; Kansas 2457; Kohala student attitudes 2401; Mispronunciation 2443, 2468; Oral reading 2509; Stage scenery and lighting 2480

Survey: Educational radio 2483; Kansas high school 2458

Testing: Judgments 2448*; Personality 2514*; Phonographic hearing 2517, 2518

Theories: Channing's 2474*

INSTITUTIONAL SOURCES OF DEGREES

Colorado State College of Education ..2435—2447
Columbia University Teachers College .....2448—2449
Cornell University .....2450—2453
University of Denver .....2454—2460
University of Hawaii 2461
University of Illinois .....2462—2465
Indiana University 2466
State University of Iowa .....2467—2475

*All numbers marked with an asterisk are doctorate theses.

Louisiana State University .....2476—2477
Michigan State College .....2480—2483
University of Michigan .....2484—2500
University of Missouri .....2501—2502
Northwestern University 2503
Ohio State University .....2504—2506
Ohio University .....2507—2508
University of Oklahoma 2509
Purdue University 2510
University of Southern California .. 2511
Stanford University .....2512—2513
Syracuse University 2514
University of Washington .....2515—2519
Wayne University 2520
University of Wisconsin .....2521—2525
Yale University 2526

GRADUATE THESES–
A COMBINED INDEX OF REPORTS OF GRADUATE WORK IN THE FIELD OF SPEECH AND DRAMATIC ART–XII, 1902-1944

FRANKLIN H. KNOWER
State University of Iowa

SECTION I

THE number of graduate theses reported from the field of speech has now passed the 2500 mark. The titles of these theses have been indexed and reported in eleven successive numbers of SPEECH MONOGRAPHS, beginning with Volume II, the 1935 issue. This issue–Volume XII–contains the eleventh report and title up to No. 2526. There appears to be a growing interest in occasional supplementary reports which summarize findings and present an accumulative index of the contents of Section III of the individual reports. This report has been prepared primarily to facilitate the use of the individual reports by the accumulative reindexing of all numbers now indexed only in the eleven different volumes. Some tables and special features of the data which should be of interest to the profession are also included here.

Table I includes data on the institutional sources of the reported theses. It also includes a record of graduate degrees granted without requirement of thesis. Although the table indicates forty-four institutions have granted graduate degrees in speech and dramatic art, only nine institutions have granted over one hundred degrees each. Nineteen of the forty-four universities have had fairly active graduate school programs over the years of these reports. Fifteen universities now grant the doctorate in speech or dramatic art.

The record of the number and per cent of the total masters' and doctors' degrees granted each year is contained in Table II. There was some decline in the amount of graduate research reported during the early depression years, and there has been a very rapid decline during the years of World War II. The year of 1941 was clearly the peak year of the development of research in speech and dramatic art.

Table III contains a record of the number and percentage of all indexed numbers in this series classified in various sub-fields of the area. The 2207 masters' degrees were indexed 5046 times and the 319 doctors' degrees were indexed 716 times. The numbers indicate frequency of listing under various subheads. The percentage figures are computed on the basis of the total numbers appearing in the index, not the total number of degrees. Radio is given a major classification among the degrees for the first time in this index.

The study of various aspects of speech content and composition, voice, and phonetics are the most common foci of research in fundamentals. Problems of argumentation, persuasion, and style are the subjects most commonly studied in speech content and composition. Audience analysis, language, personality, and various types of activities are other classifications of this sub-area with relatively high frequency interest.

Students of public address have concerned themselves most frequently with the study of the speaking of a particular orator. Two hundred and seventy-six such graduate studies have been made of 119 different men and women. Leading orators studied in terms of frequency

TABLE I

INSTITUTIONAL SOURCES AND NUMBER OF DEGREES GRANTED FROM 1902 TO 1944

	Masters' Degrees			Doctors' Degrees	Combined Total
	With Thesis	Without Thesis	Total		
Akron, University of	2		2		2
Alabama, University of	17	1	18		18
Baylor University	7		7		7
Brooklyn College	17		17		17
Carnegie Institute	11		11		11
Colorado State Teachers College	12		12	1	13
Columbia University Teachers College	5	802	807	34	841
Cornell University	136	7	143	44	187
Denver, University of	65		65	1	66
George Washington University	2		2		2
Grinnell College	1		1		1
Hawaii, University of	6		6		6
Illinois, University of	19		19		19
Indiana University	12		12		12
Iowa, State University of	497		497	67	564
Louisiana State University	86		86	16	102
Marquette University	33		33		33
Michigan State	9		9		9
Michigan, University of	90	502	592	33	625
Mills College	2	1	3		3
Minnesota, University of	50	6	56	5	61
Missouri University	16		16		16
New Mexico Normal University	8		8		8
Northwestern University	251	269	520	22	542
Ohio State University	48		48	5	53
Ohio University	10		10		10
Ohio Wesleyan	26		26		26
Oklahoma A. and M.	1		1		1
Oklahoma University	15		15		15
Pennsylvania State	17		17		17
Purdue University	10	5	15		15
Redlands, University of	3		3		3
South Dakota, University of	7		7		7
Southern California, University of	158	309	467	19	486
Stanford University	36		36	1	37
Syracuse University	19	2	21	2	23
Utah, University of	21		21		21
Washington State College	10		10		10
Washington, University of	81		81		81
Wayne University	42	24	66		66
Western Reserve University	1	98	99		99
West Texas State College	4		4		4
Wisconsin, University of	287	17	304	58	362
Yale University	57	115	172	11	183
Totals	2,207	2,158	4,365	319	4,684

TABLE II

NUMBER AND PER CENT OF TOTAL DEGREES TABULATED BY YEAR GRANTED

	Masters' Degrees				Doctors' Degrees	
	With Theses	Without Theses	Total	Per Cent of Total	Number	Per Cent
1902	1		1	.02292		
1903	1		1	.02292		
1904	1		1	.02292		
1905	1		1	.02292		
1906	1		1	.02292		
1907	1		1	.02292		
1908	3		3	.06776		
1909	1		1	.02292		
1912	1		1	.02292		
1913	1		1	.02292		
1917	1		1	.02292		
1918	1	1	2	.04584		
1920	3	1	4	.09168		
1921	2		2	.04584		
1922	7	1	8	.18336	1	.31347
1923	10	3	13	.29796		
1924	19	6	25	.57300		
1925	28	16	44	1.00848		
1926	37	18	55	1.26060	3	.94043
1927	43	19	62	1.42104	1	.31347
1928	38	25	63	1.44396	5	1.56739
1929	88	40	128	2.93376	4	1.25391
1930	79	66	145	3.32340	6	1.88087
1931	114	53	167	3.82764	2	.62695
1932	98	101	199	4.56108	11	3.44827
1933	84	128	212	4.85904	8	2.50783
1934	81	153	234	5.36328	7	2.19435
1935	109	113	222	5.08824	14	4.38871
1936	122	142	264	6.05089	21	6.58307
1937	142	170	312	7.15104	28	8.77742
1938	181	171	352	8.06784	28	8.77742
1939	164	171	335	7.65528	27	8.46394
1940	202	186	388	8.87004	32	10.03134
1941	213	209	422	9.69594	43	13.47962
1942	186	182	368	8.43456	38	11.91222
1943	82	109	191	4.37772	24	7.52351
1944	62	74	136	3.11712	16	5.01567
	2,207	2,158	4,365	99.99996	319	99.99986

include Burke—eleven, Ingersoll--ten, Franklin D. Roosevelt—ten, Woodrow Wilson—ten, Wendell Phillips—nine, Lincoln—eight, and Borah—seven. An interesting feature of the index of this section is the list of historical events studied from the point of view of the speakers of the time.

The 169 references in the field of interpretative reading indicate that these studies are both academic and creative. Reports on interpretations of twelve creative analyses have been presented.

The radio studies involve subjects on both practical and theoretical, education and commercial, production and consumptive, aspects of broadcasting. Although this area is a newcomer to speech, as to all education, it is becoming an increasingly interesting area for research.

The number of studies listed in dramatic art is the second largest in the index. Twenty-nine actors have been subjected to analytical study. Delsarte was a subject for eight theses, Fiske for five, Forrest for four, and Siddons for four. Ninety-nine different directors, managers, and playwrights were studied in 196 different theses in this area. Ibsen was the subject for the thesis

TABLE III

NUMBERS AND PER CENTS OF ALL INDEXED NUMBERS APPEARING IN VARIOUS CLASSIFICATIONS

		Number	Per Cent
Fundamentals	Masters'	988	19.60
	Doctors'	192	26.80
Public Address	Masters'	490	9.70
	Doctors'	127	17.75
Interpretative Reading	Masters'	161	3.20
	Doctors'	8	1.15
Radio	Masters'	126	2.50
	Doctors'	13	1.80
Dramatics	Masters'	1417	28.10
	Doctors'	123	17.20
Speech Pathology	Masters'	397	7.90
	Doctors'	76	10.60
Speech Education	Masters'	1467	29.00
	Doctors'	177	24.70

fourteen times, O'Neill—eleven, Shakespeare and Shaw—ten each, and Gordon Craig--seven. Twenty-five historical studies of the theatre abroad centered in England, and ten in France. In America, the history of theatrical activities in forty-one localities was recorded in seventy-three theses. New York City was the most widely studied locality. Seventy-nine original plays were written, and twenty of them presented in productions. Two hundred different plays were produced in 228 productions presented with director's studies. Designs for twenty-one plays formed the basis for that number of creative theses in stage design.

In the field of speech pathology, stuttering is by far the most frequently reported thesis subject. One hundred thirty-eight different studies were listed for some problem on this subject. The rela-

TABLE IV

THESES NUMBERS BY INSTITUTION—VOLUME AND YEAR REPORTED IN SPEECH MONOGRAPHS

	II 1935	III 1936	IV 1937	V 1938	VI 1939	VII 1940	VIII 1941	IX 1942	X 1943	XI 1944	XII 1945
Akron, University of			880–881								
Alabama, University of					1187	1374–1376	1584–1585	1806–1812	2102–2105		
Baylor University								1813–1818	2106		
Brooklyn College				1029–1030	1188–1191	1377–1384		1819–1820	2107		
Carnegie Institute			882–890		1192	1385					
Colorado State College of Education											2435–2447
Columbia University, Teachers College	1–8		891–892	1031	1193–1196	1386–1391	1586–1588	1821–1826	2108–2111	2331–2333	2448–2449
Cornell University	9–33	686–728	894–904	1032–1044	1197–1210	1392–1395	1589–1606	1827–1846	2112–2128	2334–2342	2450–2453
Denver, University of	34–38	729–730	905–907	1045	1211–1219	1396–1405	1607–1614	1847–1855	2129–2138	2343–2344	2454–2460
George Washington University		731–732									
Grinnell College			908								
Hawaii, University of							1615–1616	1856–1857	2139	2345	2461

TABLE IV—Continued

	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Illinois, University of	39–42						1617	1858–1863	2139–2141	2346	2462–2465
Indiana University						1406–1407	1618–1620	1864–1865	2142–2144	2347	2466
Iowa, State University of	43–233	733–761	909–956	1046–1082	1220–1254	1408–1477	1621–1673	1866–1903	2145–2181	2348–2363	2467–2476
Louisiana State University	234–240	762–772	957–961	1083–1095	1255–1271	1478–1485	1674–1685	1904–1912	2182–2195	2364–2367	2477–2478
Marquette University	241–249	773–774	762–963	1096–1098	1272–1274	1486	1686–1688	1913–1917	2196	2368–2370	2479
Michigan State								1942–1944	2197–2224	2394	2480–2483
Michigan, University of	250–252	775–777	964–965	1099–1102	1275–1277	1487–1488	1689–1702	1918–1941	2225	2371–2393	2484–2500
Mills College								1945–1946			
Minnesota, University of	253–261	778–779	966–973	1103–1106	1278–1288	1489–1493	1703–1705	1947–1950	2226–2233	2395	
Missouri, University of			974	1107		1491	1706–1708	1951–1952	2231–2238	2396	2501–2502
New Mexico Normal University		780–787									
Northwestern University	262–396	788–819	975–1003	1108–1135	1289–1298	1495–1503	1709–1716	1953–1963	2239–2243	2397–2401	2503
Ohio State University		820–823	1004–1009	1136–1138	1299–1307	1504–1509	1717–1723	1964–1969	2244–2250	2402–2403	2504–2506
Ohio University		824–847			1308–1311		1724–1725	1970	2251	2404	2507–2508
Ohio Wesleyan			1010		1312						
Oklahoma A. and M.									2254		
Oklahoma, University of							1726–1728	1971–1977	2252–2253	2405–2406	2509
Pennsylvania State									2255–2270	2407	
Purdue University					1313–1316	1510		1978	2271–2273		2510
Redlands, University of								1979–1981			
South Dakota, University of				1139		1511	1729	1982	2274–2275	2408	
Southern California, University of	397–525	848–855	1011–1013	1140–1144	1317–1320	1512–1814	1730–1739	1983–1991	2276–2277	2409–2411	2511
Stanford University	526–531	856		1145	1321–1325	1515–1523		1992–1996	2278–2285		2512–2513
Syracuse University	532–533		1014	1146–1148			1740–1742	1997–2000	2286–2287	2412–2416	2514
Utah, University of	534–540	857–861			1326–1327	1524	1743–1744	2001–2004			
Washington, State College of								2005–2013	2288		
Washington, University of		862		1149–1158	1328–1330	1525–1526	1745–1748	2014–2056	2289–2298	2417–2419	2515–2519
Wayne University					1331–1347	1527–1531	1749–1755	2057–2058	2299–2305	2420–2422	2520
Western Reserve University			1015								
West Texas State Teachers College								2059	2306	2423–2424	
Wisconsin, University of	541–685	863–879	1016–1028	1159–1183	1348–1367	1532–1561	1756–1789	2060–2085	2307–2328	2425–2432	2521–2525
Yale University				1184–1186	1368–1373	1562–1583	1790–1805	2086–2101	2329–2330	2433–2434	2526

tionship of hearing to speech, and the problem of defective articulation were also studied with relatively high frequency.

Theses in the area of speech education were concerned most frequently with secondary school problems, educational methods, and educational dramatics. Other subjects of frequent interest included testing, evaluation of programs, analysis of needs and abilities, and surveys.

Table IV has been prepared to enable the student of the index to locate the institutions in which the theses listed have been done, and the volumes of SPEECH MONOGRAPHS in which the complete data on the thesis title and author may be located. If, for example, the reader is interested in further data on index number 2000, he may learn from this table that it represented a thesis done at Syracuse University and reported in SPEECH MONOGRAPHS, Volume IX. Doctorate thesis numbers are marked by an asterisk in this index.

SECTION II
INDEX
FUNDAMENTALS OF SPEECH

Action: Bodily activity 188; Characterization by 105, 136, 615; The dance 346, 1197; Energies in 272; Exercises for 934; Facial expression 2150, 2155, 2161; Gesture 440, 1811; Interpretation of 7*, 1279; Motor traits 232*, 298, 320; Movement 2062, 2072; Pantomime 172, 429, 520, 561, 934, 2062, 2072, 2434*; Posture 84, 1955; Psychology and pedagogy of 557; Teaching of stage 1217; Terminology 504; Visual stimulation 332, 1103, 1279, 1306, 1784; Voice and 304.

Audiences: Adaptation of 1867; Annoyances of 1367*; Appreciation of 1772, 1816; Argument and 1781; Attitudes 968, 1016, 1306, 1313, 1314, 1315, 1316, 1716*, 1781, 2080*, 2180*, 2271; Church 596; Club 193; Comparative effects on 1334; Comprehension of 213, 630, 1284, 1455, 1529, 1887, 2156; As consumers 795; Crowds and 1554; Debate 1879, 2080*; Discussion and 1716*, 1879; Education of 193; Emphasis for 1148*; Evaluation of arguments 1781; Hostile 362, 575, 1300; Humor and 89, 635, 1163, 1559*; Informative speaking 1758, 1887, 2156; Judgment and emotion 332; Judgment on posture 84; Judgment on student speakers 1135*, 1314, 1315; Lecturing 1337; Lighting and 1630, 1649, 2164; Listener's attitudes 208, 968; Opinion changes 2271; Playgoers 1549; Provocative language 1715*; Psychology of 545, 830, 2328*; Public 404; Public opinion 1210*; Radio 208, 1455, 1749, 1788*; Rate and comprehension 630, 1284; Reactions to 1135*, 1398, 1399, 2138; Response to poetry 2449*; Rhetoricians on 1600; With speaker absent 1306; And stutterers 1047, 1106, 1419, 1430; Theatre 338, 545, 1056, 1630, 1649, 2340*, 2510.

Activities: Announcements 208; Arbitration 1587*, Argumentation 289, 2217; Auditorium 500; Business 2344; Cadet officers 2254; Choral reading 768; Classroom 1337; Commencement 1397; Common experience 1896*; Community 2304; Contests 115, 410, 511; Conversation 1219, 1402, 1871, 1875, 1912, 1916; Court room 931; Debate 124, 199, 286, 290, 325, 422, 451, 917, 1090, 1483, 2080*, 2126*, 2331*; Declamation 1552; Deliberation 200; Dialogue 208; Discussion 1199, 1290, 1292, 1388*, 1513*, 1716*, 1741, 1896*, 2121, 2206, 2287, 2406; Disputation 1903*, 1987, 2363*; Entertainment 306; Eulogies 792; Expository 894; Extemporaneous 1429; Informative 1758; Institutes 1815; Interviews 1871; Job analysis of 245; Life situation 2263, 2447*; Occasional 147; Oratory 147, 311, 325, 375, 410, 559, 826, 834, 1310, 2126*; Parliamentary 162; Public speeches 1498; Radio 208, 2064, 2402, 2413; Recitation 1062, 1401; Refutation 289, 353; Story telling 398, 521; Tournaments 891*; Tributes 151; Types of speech 118.

Content and Composition: Argumentation 55, 93, 129, 161, 254, 569, 923, 931, 968, 1511, 1781, 1861, 2217; Appeal to emotion 264, 357, 463, 610, 649, 1200, 1310, 1349, 1503*, 1526, 1745, 1925, 1976, 2139, 2180*; Aristotelian standards 756; Arrangements and structure 17, 21, 200, 433, 434, 556, 654, 1919; Audience reaction to 1398; Bible 525; Climax 2228; Conviction-persuasion duality 2277*; Debating 42, 55, 88, 117, 144, 180, 417, 919; Discussion 1998; Disposition 1034; English writers 556; Entertainment in 306; Ethics of 463; Ethical proof 463, 1628, 1745, 1962*, 2180*; Epithets 342; Exposition 894; Fallacies 2400*; Figures of speech 256, 354, 356, 358; Form and content 654; Historical allusions 321, 394, 599; Hostile audiences

*Numbers followed by an asterisk indicate doctorate theses.

362, 575; Humor in 348, 1559*; Illustrations 347; Imagery 256, 280, 478, 1302; Interest sentences 442; Invention 434, 1233, 1253*, 1416, 1473*, 1503*, 2151, 2163, 2253; Invective 367; Literary allusions 321, 377, 394; Logic 25, 144, 512, 522, 1290, 1628; Of materials 394, 1937*; Motives 2139; Oral style 673*, 1095, 1592; Oral and written style 808, 1352, 2084*; Organization 17, 21, 640, 654, 1034, 1496; Paragraph 28*; Persuasion 96, 144, 253, 254, 255, 259, 264, 336, 348, 357, 412, 417, 434, 463, 491, 502, 508, 525, 610, 649, 666, 795, 845, 868, 872, 873, 1021, 1030, 1044*, 1060, 1159, 1160, 1175, 1198, 1227, 1310, 1353, 1357, 1559*, 1743, 1747, 1821*, 1925, 2102, 2326*, 2511*; Positive and negative argument 968; Proof 833, 853, 1200, 1204, 1526, 1628, 1745, 1892, 2180*, 2419; Public speeches 1937*; Purposes 565, 1937*; Rhetoric 974; Rhetorical questions 352; Rhythm 10; Refutation 289, 353; Rumor 2416; Sentences 28*; Strategy 664; Style 311, 340, 358, 375, 601, 602, 659, 653, 673*, 678*, 704, 869, 965*, 1063, 1095*, 1272, 1349, 1352, 1592, 1871, 1875, 1918, 1927, 2084*, 2211, 2212, 2490; Stimulation of 2259; Suggestion 794, 1159; Test of thinking 2240*, 2410*; Titles of speeches 661; Transition 1532; Vocabulary 610, 650, 663, 1871.

See *Language, Personality,* and *Thinking* in this section and *Rhetoric* and *History* under PUBLIC ADDRESS.

Emotion: Attitudes and dramatics 227*, Characterization and 332; And defects of speech 543, 621; Duration in speech 1059; Effects of courses on 564; Emotional appeals 264, 357, 463, 1200, 1349, 1503*, 1526, 1745, 1925, 1976, 2139, 2180*; Ethical proof 463, 1200, 1745, 2180*; Ethics 463; Feeling and 1736*; Galvanometric readings and 37, 907; Gesture and 440; Interpretation of 1279; Judging 332; And letter sounds 1361; Meanings 1539; Nervousness 1037; Pathetic appeal 1526; Public speaking and 265; Reading 229*; Rhythm and 271; Speech symbols of 1103; Speech of the theatre 1070; Speech training and 564; Stage fright 380, 788, 810, 830; Thought and action 1736*; Tragic 309; Suggestibility 794; Voice and 229*, 563, 879*. See *Personality* in this section.

Language: Allness behavior 1850; Attitudes and 258; Changes 1456; Color in 646; Defining words 1445; Descriptive language 1422; In discussion 1651; Epithets 342; Errors 1293; Figurative 256, 354, 356, 1125; Freshman 211, 913, 1060; Grammar in 867; Imagery 280, 799, 1168, 1302; Inflection 867; Intelligence and 1547; Interest in 442; Invective 367; Of Johnson and Stevens 1556; Labeling behavior 1451, 1465; Loaded words 610; Meaning 1167; In O'Neill's plays 258; Oral and written style 869, 1352, 1786*, 2084*; Oral vocabulary 1898*; Persuasion in 253; And phonetics 1659; Progress in 1344; Prose rhythm 10; Prospective teachers 1426; Provocation 1715*; Psychology of 264, 1004, 1007; Rhetorical questions 352; Semantics 1167, 1433, 1445, 1451, 1465, 1612, 1675, 1725, 1854, 2135, 2338*; Sentence and paragraph 28*; Sentence length 1758; Sentence structure 1060; Sentence usage 1426, Southern dialect 1681; Of speaking and writing 2084*; Style 311, 340, 358, 601, 602, 659, 673*, 678*, 704, 869, 965*, 1063, 1095*, 1349, 1592, 1786*, 1875, 1918, 1927, 2084*, 2211, 2212, 2490; Rhythm 1700*, 1701*; Teaching 869, 1024; Type-token ration 1405; Verbal abstracting 1433; Verbal output 650; Vocabulary 650, 663, 770, 913, 1007, 1236, 1396, 1426, 1556, 1871, 1898*, 2500*; Of women speakers 1095*; Word association 822; Word consciousness 1007; Word-fact relations 1442; Word imagery 1302; Word length 1425; Word meaning 1136, 1216. See *Content* and *Composition* in this section.

Personality: Adjustments 543, 621, 1218, 1231, 1525, 2395; Aesthetics 488, 577; Aggressiveness 1169; Association 822; Attitudes 968, 969, 971, 1016, 1388*; Background of 1218, 1234; Bernreuter test 1463; Case histories 917, 1234, 1285, 2395; Concentration 2458; Creative imagination and 387, 982; Debaters 1376; Development of 34, 227*, 415, 564, 576, 1212, 1218, 1219, 1318, 1366*, 2073, 2440; Dominance 1401; Education and 2073; Egocentricity 1219, 1848; Energy and 1101*, 2272; And forensics 1983; Fresnel lenses 1643; Gilkinson-Knower Guidance Questionnaire 1868; Intelligence 1547; Introversion 38; Mental imagery 478; Miller-Murray test 1849; Mind 41, 79, 104; Motivation 357; Objectivity 1219; Pitch and 2365; Self analysis 194; Social behavior 202, 227*, 1216, 1389*, 1610, 2133, 2395; Speaker's 35, 37, 38, 194, 202, 320, 405, 478, 488, 543, 577, 591, 621, 633, 788, 810, 1217, 1530, 1819, 1848, 1983, 2136, 2137, 2395, 2463, 2514*, Speaker and writer 2136; Speech reaction time and 1848; Stutterers 794, 2411*; Style and 1875; Suggestibility and 794, 1159; Teachers 1404; Thinking-feeling-doing 1736*; And verbal output 1396; And voice 544, 2233*; Wish-fulfillment 550.

Phonetics: Accent 870, 1029; Analysis of 1244; Apparatus for recording 685*, 1384; Articulation 83, 1244; Articulation and maturation 1620, 1770; Articulatory development 252*; Articulatory disorders 62, 106, 121, 131, 929; Articula-

tory errors 1869; Of children 252*, 623, 961*, 2377; Of college freshmen 1414; Articulation of stutterers 62, 735, 1991*; Comparative 1659; Consonants 63, 252*, 603, 1812, 1912, 2179*, 2247, 2353, 2493, 2498; Diadochocinesis 1544, 1545, 1748, 1776; Dialects 86, 99, 116, 126, 341, 386, 469, 573, 623, 812, 870, 997, 1029, 1391*, 1392, 1410, 1484*, 1621, 1681, 1684*, 2105, 2110*, 2186, 2187, 2192, 2249, 2261; Diction 179; Difficulty of 1147; Diphthongs in Alabama 2105; Dramatics, problems in 76, 85, 99, 438, 2261; Discrimination of 582, 1518, 1685*, 1864, 2405; Distribution 1005; Drill book 1683; Duration of 1485*; Emotional effects 1361, 1378; English sounds 961*; Frequency 958, 1414, 2487; Fricatives 1719; In Hawaii 2110*; Homophonous sounds 1986; Intelligibility 1971; Inflection and 867; Instrumental 1384; Jaw movement 1776; Judging 1615; Lip movement 329, 2315; Lisp 47, 54, 2390; In Louisiana 1257, 1259, 1260, 1263, 1265, 1266, 1269*, 1270*, 2186, 2188, 2192; Memory span for 1177*, 1764, 1904, 2222; Motion picture study of 1986; Mulcaster 1820; Nasal sounds 669, 2174; Neurology and anatomy of 682*; Organic disorders 148, 1748, 2459; Palatography 1431; 2352; Phonemes 1084, 1094; Pleasantness 1378; Pronunciation 76, 85, 86, 99, 477, 926, 935, 1005, 1050, 1055, 1104, 1221, 1243, 1482, 1490, 1616, 1683, 1727, 2113, 2114, 2247, 2332*, 2468; "r" phonemes 2192; Radio 1005, 2332*; Recording 685*, 1384; Regional 116, 235, 812, 961*, 1257, 1260, 1265, 1266, 1269*, 1270*, 1621, 2186; Salivary "ph" 2310; Sibilant 874; Sound images 964*; Speech and stuttering sounds 735; In speech education 40, 59, 72, 76, 85, 106, 121, 126, 131, 148, 179, 399, 679*, 997, 1083, 1088, 1683; In spelling 958, 1616, 2194*; Structures 83, 1748; Superior 1431; Stutterers 62, 735, 1068, 1420, 1435, 1991*, 2310; Suffixes, 1951, 2238; Syllabic emergence 1936*; Symbols 1235, 1907; Tests 47, 186, 1418, 1615, 1685*, 2405, 2505; Tongue 83, 2353; Training 121; Vowels 70, 212, 549, 639, 759*, 1080*, 1193*, 1764, 2487. See *Articulation* under SPEECH PATHOLOGY, and *Articulation and Exercises* under EDUCATION.

Thinking: Adaptive reasoning 254; Debating and 512; Effects of discussion on 2259; Enthymeme 777*; Evaluation of 1781; Fallacies in 2400*; Logic 25, 434, 522, 1290, 1886, 2189; Measurement and 2240*; Proof 833, 853; Reasoning and 224*; Teaching 2321, 2327*; Test 2240*, 2410*.

Voice: Abilities 1244; And action 304; Action of organs and 1487*; Analysis of 50, 158, 278, 672*, 1244, 1331; Audibility of 1909; Auditory acuity and 1307*; Breathy 2397; Change of 989 2351; Character 544; In classroom lecturing 1337; Conversationalism 2420; Criteria 1760; Deviations 2393*; Duration 201, 1059, 1252*, 1434, 1673*, 2355; Effective elements 50; Emotion and 563; Emphasis in 1407; Fluency 1465, 2147; Fold movement 1003*; Force and intensity of 81, 109, 201, 229*, 273, 304, 372, 879*, 1252*; 1397; Hoarseness 2142, 2381, 2397; Inflammation of folds of 1710; Mechanism 1089, 1119, 1276*, 1720, 2213, 2475*; Melody 341, 776*, 2513; Memory span for 962, 1516, 1760, 1764; Musical 3; Nasality 669, 1066, 1469*, 1859, 2105, 2179*; Oral structures 1623, 1639, 1660, 1665, 1748, 2174; Palate and 2390; Personality and 544, 2233*; Phonation 201, 212, 370, 462, 639, 672*, 1276*; Phonokinesigraph 1250*; Phonophotographic study of 462; Pitch 51, 73, 109, 116, 117, 138, 229*, 236, 239, 337, 443, 879*, 1070, 1079*, 1093, 1252*, 1356, 1471*, 1474*, 1475*, 1667, 1720, 2152, 2157, 2173, 2385*, 2365; Pitch and duration 1673*; Pitch and intensity 229*, 1080*, 2397; Pitch change 1940*; Projection 956*, 2351; Quality 221*, 549, 669, 675*, 879*, 1103, 1331, 1469*, 1488*, 2142, 2397; For radio 419, 1137, 1214, 1780, 2130; Rate and time 116, 201, 229*, 250*, 273, 313, 597, 630, 1006, 1059, 1137, 1214, 1252*, 1301, 1411, 1415, 1441, 1631, 1855, 2130, 2147, 2273, 2355; Readings for 1415; Recording 685*; Resonance 669, 1002*, 1009*, 1355, 1488*; Resonators 370, 371; Respiration 109, 163, 167, 224*, 237, 285, 291, 554, 771, 772*, 775*, 905, 1008, 1149, 1468*, 1909, 1955, 2204, 2210, 2391*; Respiration and physique 2391*; Rhythm 10, 109, 271, 273, 291, 553, 656, 844, 867, 1488*, 1700*, 1701*; Rush 2195*, Science of 681*; Singing and speech 1516, 1760, 2319; Sinuses 1355; Southern 960*; Spirometric study 1008; Syllabic rate 1137; Symbols 1103, 1279; Tempo of deaf 1006; Terminology 504; Texts 158; Tones 167, 201, 879*; The tongue and 83, 2213; Training 13, 49, 148, 236, 279, 399, 470, 586, 1252*, 1516, 2522; Vibrato 221*, 1488*; Vocal attack 1119; Vowels and 212. See *Interpretative Reading* and *Methods* under EDUCATION.

PUBLIC ADDRESS

Debating: Benton's 1416; Beveridge-Hoar 144; Borah's 117, 664; A. Campbell's 1046; Congressional 845, 2165*; 2191*; Decisionless 286; Disraeli's 1461; Fox-Pitt 88; History of 233*, 290; Intercollegiate 290, 325, 833, 1090, 1292, 2331*; Lincoln-Douglas 417, 522, 1049, 1382; And logic 512, 522; Secondary school 58, 114, 422, 451,

917, 1483, 2080*; Webster-Hayne 42, 55, 353. See same under EDUCATION.

Discussion: Analysis of 1850, 1879; And arbitration 1587*; And change of opinion 2271; And debating 1851, 2126*; Describing 2126*; Effects of 1388*, 1850, 1879, 2240*, 2259, 2287; History of 1513*; Junior high school 2121; Language 1651; Logic in 1290; Plato on 1199; Proof in 1204; Processes of 1741; Round table 1886; And social attitudes 1716*; Socrates on 2406.

History: American oratory 44, 45; Anti-slavery 575; Argumentation 2217; Campaign of 1858, 757; Civil Service Reform 2342*; Colonial expansion 599; Compromise of 1850, 756; Congressional record 1742; On the constitution 122, 180; Current social problems 1315; Debating 233*, 290; Democracy 383, 406; Discussion 1513*; Disputation 1903*, 1987, 2363*; Four-minute men 1767, 1892; International peace 1628; Iowa 747; Kansas spell-binders 2318; Kansas territory 1713; League controversy 724, 845; "March of Time" 2402; Missouri 1706, 2234, 2235, 2236, 2396, 2501, 2502; New England 43; Neutrality debates 2126*; The Philippine question 144; Pre-revolutionary oratory 643; Presidential campaigns 674*, 1172, 1176, 1747, 2326*; Pro-slavery 919; Reconstruction 184; Reform bill 112; Selective service bill 2426; Senate debates 117; Southern constitutional rights 1181*; State rights 750; Suffrage movements 465; Teaching 531*; The union 379; Wilson and 257; Women in 489, 1095*, 1176; On women's suffrage 465.

Homiletics: American 223*; Beecher on 98, 251*, 362, 601, 973, 2511*, 2398*; Brooks 1065, 1099*; John Donne 14; Drama in 331; Eloquence 825; English 228*, 1395*; Extemporaneous speaking 1429; Form in 150; Grundtvig's 2241*; Kleinert 1506; Moody 1496, 2328*; Negro 732, 2392*; Persuasion 508; Phillips 280; Porter 2181*; Puritan revivals 1159; St. Paul 1743; Sermons 614, 649; Spanish 27; Of South 21; Spurgeon 508, 2476*; Style in 678*; Survey of 731; Theory of 150, 1671; Yale lectures 973, 2511*; Word imagery in 1302.

Orators: Maud Adams 624, 1697; J. Q. Adams 761*, 2253; James B. Angell 1927; Susan B. Anthony 1363*; Aristotle 19, 25, 433, 434, 463; St. Francis Assisi 1018; Beecher 98, 251*, 362, 601, 973, 2398*; Benton 379, 1174, 1416, 1708, 2124*; Berger 2063; Beveridge 231*, 483, 2314; Jeremiah Black 222*; Evangeline Booth 1537; W. E. Borah 117, 664, 1349, 1511, 2177*, 2256, 2525*; Breckinridge 1678; Phillips Brooks 1065, 1099*, 1985; John Bright 153, 225*; W. J. Bryan 255, 347, 412, 599, 791, 1136, 1351, 2372; Burke 9, 20, 22, 23, 30*, 256, 689, 725*, 1040*, 1043*, 1182*; Canon 1227; Calhoun 750, 919, 1640, 1897*; Alexander Campbell 463, 1046; Zachariah Chandler 2378; Choate 118, 1637; Winston Churchill 1924, 2060, 2102, 2212, 2516; Cicero 433, 434, 463; Clay 756, 1963*; Cobden 157, 718; Bourke Cochran 2081*; Corwin 757; Costigan 1607; Rev. Charles Coughlin 1026; Albert Cummins 1227, 1949*; George W. Curtis 352; Darrow 872, 1891, 1960*, 2207, 2419; Jefferson Davis 2211; Demosthenes 19, 1200; Thomas E. Dewey 2151; Disraeli, 1461, 1622, 2175*; John Dickinson 2266; Dorothy Dix 1175; Dolliver 151, 1873, 2154; John Donne 14; Douglas 733, 747, 792, 1049, 1253*, 1382; Jonathan Edwards 951*; Emerson 498; Erskine 93; W. M. Evarts 1919; Edward Everett 1444; Fosdick 1352, 1357, 1652; Fox 88, 129, 132, 230*, 1182*; Glenn Frank 666; Samuel Gompers 1557*; Thomas Gore 1977; Grady 147, 336, 491, 1028*, 1115; Nicholas Grundtvig 2241*; Frank Gunsaulus 377; Hamilton 122, 1107; 1494, 1821*; Hayne 55; Patrick Henry 1364*; Hoar 599; Herbert Hoover 259, 650; Houston 1680; Ingersoll 200, 340, 354, 394, 873, 1464, 1473*, 1735*, 1861, 2205; Dr. Johnson 24; Andrew Johnson 1566, 2079*; R. M. LaFollette 790, 1787*; I. A. C. Lamar 1479; Landon 1172; Lincoln 11, 348, 358, 442, 918, 1049, 1382, 1918; Lodge 599; Long 868; James Mackintosh 925; Madison 180; Dwight L. Moody 1496, 2328*; W. H. D. Murray 1726; Macaulay 112; Benito Mussolini 1353; Theodore Parker 952*, 1021; St. Paul 1743; Benjamin Palmer 2367*; Phillips 253, 280, 321, 342, 575, 676*, 842, 1633, 2399*; Pitt, Earl of Chatham 175; Pitt, the Younger 162, 254, 1182*; Ebenezer Porter 2181*; Sergeant Smith Prentiss 1268*; Quintilian 433, 434, 463; Lord Rosebery 1952; Eleanor Roosevelt 1974; Franklin D. Roosevelt 650, 1160, 1172, 1308, 1460, 1656, 1747, 1925, 2376, 2490; Theodore Roosevelt 367, 1657, 1922, 2239*; Savanarola 1020; Karl Schurz 928, 1916; Anna Howard Shaw 809; Richard B. Sheridan 197, 1182*, 2324*; Jon Sigurdson 2243*; Alfred E. Smith 1914; Robert South 21; Charles H. Spurgeon 508, 2476*; Alexander Stephens 1179*; Isaac I. Stevens 2515; Thaddeus Stevens 753, 792, 1556; Charles Sumner 1233, 1457; Tillman 1674; Norman Thomas 1867, 2170; Dorothy Thompson 2163; John M. Thurston 1551; James K. Vardaman 2478; George G. Vest 395; Voorhees 184, 1777, 2225; Willkie 1925, 1981, 2414; Booker T. Washington

2215; Webster 17, 42, 353, 931, 1063, 1647, 1883, 1938*; James Wilson 923; Woodrow Wilson 96, 161, 257, 383, 476, 965*, 995, 1312, 1628, 2139; Winans 433; Witherspoon 1672*; W. L. Yancy 1181*; Brigham Young 1739*.

Oratory: Ability and 562; American 44, 45, 643; Burke on 23; College 826, 834, 1310; Content 311; Contests 410; Court oratory 552; Eulogies in 792; And fine arts 559; Johnson in 24; Indian 864, 1338; Influences of court 552; Manual 981; Negro 732; Prose in 10, 313; Qualities 153, 197; Refutation in law 289; Rise and fall of 1509; Shakespeare's 1158; An oration 826; Spanish-American War 2005; Style 311, 340, 375; Training 12, 13, 15, 562; Vocabulary 663; Voice in 13; *Who's Who* 634 Women's 459, 465, 489, 598, 634, 855*, 1095*, 1176.

Public Speaking: Aesthetic elements in 2405; Annoying characteristics 1367*; Audience psychology 830; Of Bible 567; To civic clubs 193; In civil service reforms 2342*; Classroom 1337; In *Congressional Record* 1742; And debate 286, 1292; Emerson on 2145; Emphasis in 1148*; Evaluation of criteria for 1314; Extempore 1429; Four-minute men 1767, 1892; Greek democracy 406; Humor in 1559*; Iroquois 1941*; Isocrates on 1295; Language in 1744; Macaulay on 1428; Mental imagery in 478; Measurement of 1314; Missouri 1706, 2234, 2235, 2236, 2396, 2501, 2502; In Mormon church 2077; Motivation of 357; Nervousness in 1037; Pareto on 647; Plato on 1199; Proof 1200, 1209; Preaching 1302; Presidential campaigns 674*, 2326*; Quaker 2068; Quintilian 1682; Refutation in 289; And semantics 1832; Shakespeare 1744; Suggestion in 1159; Teaching 531*; Textual changes in 1978; Theory of 761*; Transition in 1532; In Tuberculosis Associations 1491; Utah 2082*; Witherspoon on 1672*; Women in 459, 465, 489, 598, 634, 855*, 1095*, 1176.

Rhetoric: Adams 761*, 2253; American theory of 1714*; American statesmen 1937*; Ancient and modern 569; Aristotle 19, 25, 433, 463, 1394; And the audience 1600; Bacon 33*; Beecher 98, 251*; Campbell 463, Capella 18; Carlyle 974; Carnegie 1311; Channing 2474*; Choate 118; Cicero 433, 463; Cox 556; In debating 1090; Demosthenes 19, 1200; Disposition in 1034; Emerson 498, 2148; English theory 1042*; Enthymeme 777*; Ethos 1962; Erskine 93; Form and content 654; Foster 1311; Hamilton 1107; Thomas H. Huxley 32*; Ibsen's social reforms 26; Invention 1233, 1253*, 1416; Isodorus 1188; Lines of argument 1861; Methods of 118; Milton 1041*, 1707; Nature, purpose, and place of 1381; Of Notker Labeo 1472*; Plato 1030; Prose rhythm 10; Public opinion 1210*; Quintilian 15, 433, 463, 1682; Sarett 1311; Social drama 26; Socrates 2406; G. Julius Victor 1297; Whately 31*, 556; Winans 433; Thomas Wilson 29*.

Theory: Adams 253, 761*; Aristotle 433; Bacon 33*; Beecher 251*; Brooks 1099*; Carlyle 974; Costigan's 1607. Cicero 433; English 1042*; Public opinion and 1210*; Quintilian 15, 433; Rhetorical 724, 777*; Sociological 647; Winans 433.

INTERPRETATIVE READING

Ability in 1327; Abridgment of novels 584; And acting 1091, 1775; Actors on 16; Aesthetics 1481; Authorities on 802, 1011; Books on 527, 1645; Brooke's poetry 799; Of Browning's *Andrea del Sarto* 1973; Children's 566; Choral 36, 482, 768, 2209, 2276; Clark 1289; Conversational 2420; In colleges 1824*; Critics 16; Critique 1320; Curry on 104, 274, 2104, 2364; Dante's *Inferno* 2001; Delsarte 79, 301, 723, 1183*, 1679, 1908, 1911, 2190; Of Dickens 2252; *Down to Camelot* 400; And dramatic 2288; Elliot's *Ramola* 987; Elocution 534, 535, 536; Emotional and unemotional material 229*, 563; Emphasis in 1407; Entertainment 306; Errors in 1071; Aesthetic principles of 1481; Experimental study of appreciation 1816; Expression in 332; Of Euripides' *Trojan Women* 1975; Eye movements in 1614; Fine art of 350, 580, 1481; Frost's poetry 296; History of 1824*; Homer de Portugal 1215; Imagery in 653; Imagination in 982, 1771; Inner speech in 270, 298, 510; Intelligibility of 2425; Interpretative 61; *The Eve of St. Agnes* 979; Of Fanny Kemble 1833, 2187; Literature for 1320*, 1813; Longfellow's poetry 801; Amy Lowell 631, 1761; James R. Lowell 1761; Measurement of 261, 563, 1284, 1313, 1327, 2161, 2351, 2425*; Mental hygiene 576; Monodrama 213; Negro poetry 1548; Negro preaching 2392*; The novel 584, 912, 2423; Alfred Noyes 2106; O'Neill 258; Oral monologues 1012, 1086, 1323, 1360, 2313; Original 1213, 1318, 1984; Of Poe's *Fall of the House of Usher* 1128; Poetry for children 1025; Poetic structure 801, 852; Postures for 84; Principles of classicists 1540; Prose 313; Psychology of 437; In radio 1768, 2423; Rate 313, 1301, 1411, 1631, 1855, 2130, 2146, 2273; Rating 2425; Religion 36; Respiration 554; Riley's 807; Rosalind in Shakespeare's *As You Like It* 996; Ruskin's 571; The short story 1768; Siddons 363, 1035, 1796; Silent reading and 510, 541, 1320*, 1327, 1411, 2509; Status of 1360; Stories 1768, 2379; Story telling 398, 521; Stut-

tering in 937; Swinburne's *Hertha* 1114; Teaching 149, 1450, 2238, 2351; Technique 61, 149, 258, 262, 268, 282, 350, 437, 580, 729, 802, 832, 836, 852, 871, 1330, 2364; Tennyson's images 1145; Tennyson's *Launcelot and Elaine* 989; Testing materials 261, 2161, 2351; Of Wilde's *Lady Windemere's Fan* 1091. See *Oral Reading* under EDUCATION.

RADIO

Adaptations for 1340, 1341, 1768, 2423; Announcing in 2064; Announcements on 208, 1976; Audience or listener studies of 208, 1455, 1749, 1753, 1788*, 2402; Basic course in 1326, 1558*; Children's 217, 651, 2061; College broadcasting 1817; Commentators 1854; Commercials 208, 1976; Course book 1326, 1558*; Curriculum 1248*, 1326, 1558*; Diction for 764; Delivery in 640; Drama in 616, 881, 1261, 1340, 1341, 1348, 1439, 2171, 2466, 2506*; Documentary 2348, 2413; Educational 609, 651, 766, 871, 1248*, 1334, 1340, 1341, 1348, 1527, 1550, 1627, 1666, 1695, 1749, 1773, 1817, 2061, 2184, 2305, 2307, 2483; Elementary school 2061; Evaluation 1334, 1350, 1550, 1627; Language in 1651; Listening 1749, 1753, 1788*, 2402; "March of Time" program 2402; Oboler, radio dramatist 2466, Oral style in 602, 640, 659; And platform speaking 609; Producing plays 616, 1261, 1340, 1346, 1439; Program evaluation 2307, 2402; Pronunciation for 1005, 2332*; Radio training of student 1753, 2203; Reading novels for 2423; Religious education by 2520; Round table 1350, 1651, 1886; Rumor in 2416; School trends in 2305; Script changes 1456, 1651; Scripts 2171; Scripts on war 2412, 2416; Secondary school training in 2184, 2203; Semantics 1854; Short story in 1768; Speakers 1026, 1526, 1651, 1652, 1974; Speech in 640, 1248*, 1326; Speech teaching by 766; Sponsors 1248*; Staff organization 1669; Station WHA 1773; Station WJR 2304; Student needs 1420; Style 602, 659; Teacher's Association 1666; Time factors in 1214, 2130; Vocabulary 2500*; Voice on 419, 1005, 1137, 1214, 1301, 1780, 2332*; Writing for 616, 1261, 1439, 1456, 1538, 1666.

DRAMATIC ART

Acting: Actors on 16; Amateur 102, 488; American 1606*, 1722, 2029; Apprenticeship 190, 198, 203; Books on 1423; British, eighteenth century 581, 875, 876*, 1345, 1514*; Characterization in 105, 136, 332, 615; And interpretation 1775; Courses and exercises 94, 136, 172, 561, 593; Court 1506; Craig's theories of 2107; Criteria of 123, 572; And the dance 346; Education of actresses 190; Electra's 637; Emotional speech 1070; English 293, 581, 854, 875, 876*, 1345, 1805*; English pantomime of Grimoldi 1679, 2434*; Hamlets 300, 2389; History of 247, 293, 429, 581, 1176, 1486; Ibsen 797; Of Juliet 1935; Mansfield on 921; Othello 2385; Pantomime 172, 429; Period 899; Personality in 35, 405, 488, 550; Pitch changes in 1079*; Professional 111; Portia 1499, 2219; Qualities 572; Rating 123; Realistic 1965; Repertoire 1467; Richard II 1238; Richard III 2197; Rosalind 2494; Of St. Joan 1432; Shylock 381, 445; Stage Indian 2019; Stage and screen 1512, 2091; Stanislavsky system of 1783, 2059, 2489; Studies in 1661, 1670, 2158, 2362, 2467, 2473; Talma on 1599; Technique of 1267, 1508; Theories of 698, 709, 719, 728*, 854, 876*, 1432, 1599; Training in 140, 172, 190, 198, 203, 593, 1287, 2107.

Actors: American 247, 2029; Frank Bacon 1994; Barrett 204, 2224*; Booth 182, 711, 1721, 2220; Caroline Chapman 1995; Contemporary 149; Cushman 100, 2202, 2387; Davenport 1939*, 2198; Delsarte 79, 301, 723, 1183*, 1679, 1908, 1911, 2190; In Europe 1142; Fiske 1054, 1731, 1965, 2027, 2497; Forrest 169, 533, 590, 2185; Garrick 364, 1036, 2526*; Gillette 2020, 2496; Goodwin 2034; Historical study 854, 1142; Harrigan 2032; Interests 1240; Irving 57, 696; Jefferson 755, 1039; Kean 1967, 2526*; Kemble 1833, 2186; McCready 1839; Mansfield 1929; Marlow 2384; Modjeska 207; Pantomimic 429, 1679, 2434*; Pitch 1079*; Rating 123; Rehan 1409; Ristori 2202; Ruskins 571; Sheridan 197, 1035; Siddons 363, 1796, 2202, 2526*; Skinner 1689; Solomon F. Smith 1831; Terry 2034.

Children's: Adolescents 1964; Creative 317, 977, 1779; History of 287, 2054; Ideal for 2044; Junior Playmakers of North Dakota 967, 2408; Methods of 119; Plays for 1711, 2438; Preferences in 1822*; Elementary School 119, 168, 648, 1309, 1822*; See *Dramatics* under EDUCATION.

Community and Little Theatre: Books on 1113; In California 530; Canada 359; Community basis 1209; Director's functions 2472; Evolution of 402, 835; Folk 324, 1543; History of 292, 1133; Institutional 740; Mid-century 1677; Neighborhood 409, 1478; Plays for 238; Players 105; Practices 496, 2471; Rural 275, 2312; Services of colleges and universities 551, 2471; Social background of 690; As a social institution 1995; In social settlement 1946; Theories 903*; In the United States 1478.

Costuming: Accessories 1255; Bible 843; Elizabethan 152; Fourteenth century English 941;

For *Francesca da Rimini* 2166; Fourteenth to eighteenth centuries 753; Of E. W. Goodwin 2034; Greek 589; Handbook for 2030; History of 1255; Indian Ceremonial 1186*; Interpretative 839; *Love's Labor Lost* 2360; New Mexican 787; Nineteenth century women's 1926; *Macbeth* 2229; Oriental 754; Pioneer 2484; Principles of 139; Seventeenth century 1865; Shakespeare for schools 983; Roman 154; Style trends 800, 803, 978, 984, 1116, 1291; Textiles dyeing for 734; *Tosca* 1798; University 2078.

Criticism: Aesthetics 629, 1846*; Archer's 706, 2067; Art 2337*; Of Atkinson 1676; George P. Baker 1406; Censorship 466, 1603, 2014, 2103, 2218; Character in 1845*; Copyright laws 739; Current 302; The dramatic 831; Ethics 827; On expression 16; E. Faguet 1393; Of Huneker 2035; Of Ibsen 384, 1910; Instincts 828; Of Macterlinck 2293; Mathews 2036; Negro 243; Of O'Neill 294, 389; For the playgoer 1549; Propaganda 2127*; Purpose in drama 2208; Relations in theatre 2340*; Review of 695; Romanticism 2125*; Of Rymer 1596; Symon's 1201; Theory of 1832, 1833, 2112, 2340*; Trends in 1161; Winter's 898, 1699*, 2024; Wishful thinking in 550; Young 705, 1906.

Dancing: And drama 1197; Modern 346.

Directing and Producing: Art principles 108, 712, 1409; Characterizations 94, 105, 126, 615; Choral problems 2358; Comedies of manners 94; Copyright law 739; Dialect problems 46, 85, 99, 438, 469, 1410; Diction 179; Dramatic structure 895; Elizabethan plays 1203; Elizabethan weapons in Shakespeare's plays 992; Expressionism 444, 896, 902*, 957; Greek plays 1597; History 687, 1970; Hue cycle 343; Limelight 1117; Miracle plays 2182; Moliere 2320; Nineteenth century 892*; Pronunciation problems 46, 76, 85, 99, 438, 469, 1410; Plays for radio 616, 1340, 1341; Theories 240, 481, 691, 709, 712, 714, 727*, 769, 811, 880, 901, 1038, 1044*, 2129; Shakespeare 703; Speech in 1842; Staging 108, 210, 1038, 1827, 1961*; Television 1866; Violence scenes 1961*

Dramatists - Playwrights - Producers: Aldridge 2377; American 2317; Anderson, 1168, 1196*, 1258, 1406, 1560*, 1934; Leonid Andreyev 1346; Antoine 1189; Appia 694, 700, 903*; William Archer 2067; George P. Baker 1406; Frank Bacon 1994; Barker 900; James Barrie 281, 2280, 2298; Beaumarchais 1273; Beaumont 904*; Belasco 48, 246, 481, 1278, 1299, 2231*; Benavente 333; Bergman 848; Andre Birabeau 2000; Bjornson 378; Dion Boucicault 1830, 2031; Edward Brandes 2339*; George Buchner 1501; Chekov 715, 1836, 2039; Colley Cibber 368, 697; Jacques Copeau 901, 1170; Coquelin 1507; Corneille 355; Gordon Craig 128, 366, 481, 691, 1718, 2034, 2107; Augustin Daly 949, 2023, 2199; Alfred De Musset 1519; John Drinkwater 283; Dryden 1591; Nicholas Evreinov 901, 1841; George Farquhar 2216; Emile Faquet 1393; William Ferrold 365; Fielding 1598; Clyde Fitch 385, 2033, 2242*, 2282; Fitzgerald 710; Fletcher 904*; Galsworthy 479, 893, 959, 2118; Garrick 364, 1036; W. S. Gilbert 53; Goethe 1098; Carlo Goldoni 1834; Paul Green 1778; James Hearne 2279; Howard 1585; Hugo 693; Ibsen 26, 267, 384, 458, 475, 538, 642, 717, 797, 798, 1256, 1910, 2227, 2296; Leopold Jessner 901; Henry Jones 1996; Robert Jones 481; Louis Jouvet 1305; Kaufman 1619; James S. Knowles 124; Komisarjevsky 901, 1593, 2380; Percy MacKaye 2045; Steele MacKaye 1278, 1590; W. C. McCready 1839; Maeterlinck 1206, 2293, 2308; Richard Mansfield 921; Brander Mathews 702; Vsevolod Meierhold 901, 1191; William de Mille 2041; A. A. Milne 312; Moliere 692; Negro 2470; Nietzsche 903*; O'Casey 767; O'Neill 258, 294, 389, 785, 1303, 1406, 1693, 2245, 2281, 2284, 2334; Pirandello 2116; Powell 506; Racine 355, 494; Reinhardt 436, 481, 514, 2183; Lynn Riggs 1454; Richie 816; Robertson 819; Rolland 903*; Rostand 2290; Rymer 1596; Maurice Schwarts 1835; Shakespeare 457, 615, 703, 975, 992, 994, 1158, 1596, 1949, 2023, 2285; Shaw 76, 284, 310, 388, 537, 686, 1138, 1166, 1827, 2294; Sheldon 2028; Martinez Sierra 322; Simonson 481; Solomon Smith 1833; Stanislavsky 481, 2183, 2380, 2489; Steele 1590; Strindberg 1837; Symons 1201; Synge 720; Alexander Tairov 901; Tarkington 784, 2051; Augustus Thomas 991, 1226, 2043; Tolstoy 903*, 2119; Eugene Walter 2037; Wagner 903*; Wilde 2291; Women 2289; Samuel Woodworth 2042; Young 705.

History of the Theatre Abroad: Acting in London 1805*; Actors in Europe 293, 1142; Antoine's 1189; Baroque Physical Theatre 2417; Canada 359; Censorship in England 466, 2103, 2218; China 426, 485; Classical and medieval 355, 2128*; Commedia del' Arte 453, 1185*, 2128*; Duke of Meiningen 1506, 1738*; Egypt 2101*; England 160, 244, 293, 364, 457, 466, 492, 581, 708, 854, 875, 876*, 878*, 1162, 1203, 1345, 1514*, 1601, 1705*, 1805*, 1860, 2122*; English comedy 2122*, English court mask 1932; English tragedy 2026; Duke George II 1506, 1738*; Guild plays in England 2370; Feminism 303; France 266, 335, 364, 453, 1189, 1507, 1589, 1599, 1829, 2329*; Germany 160, 2123*; Greek 328, 355,

824, 850, 1993; Indian 688, 726*; Ireland 767; Italian Renaissance 1343; Japan 416, 897; House of Savoy 2433*; Malabar 726*; Medieval 781; Moscow Art Theatre 1840; Perspective in Renaissance 1184*; Puppetry in England 1162; Puppetry, oriental 487; Roman 335, 1648; Russia 361, 515, 648, 709, 963; Shakespeare 457; Society Islands 2025; Spanish 432, 505; Symbolism 1829; Victorian dramatists 1354; Whig propaganda 1705*.

History of the Theatre in America: Acting 1171, 1287, 1606*, 1722, 2029; Actresses 247, 1171, 1287; Buildings 1602; Censorship 2014; Chekhov 2039; Children's 287; Civil war drama 367; Comic 2070; Detective drama 1280; Dialects of actors 2262; Dramatic Yankee 641; Expressionism 444; Federal theatre 1555; Folk drama 324, 1543; Folk lore in 2006; Globe theatre 1443; Golden age 655; Greek plays 1194*; Hokum 513; Indian 688, 726*; International marriage 2022; Irish players 2418; Latter Day Saints 1989*; Lighting 452; Little theatre 292.

[*Localities*: Buffalo, N. Y. 2388; California 447, 530; Cheyenne, Wyo. 789; Chicago 975, 1133, 2444; Cincinnati 92; Cleveland 1118; Colorado territory 2439; Denver 501, 1275*, 1608, 1853, 1958*, 2343; Des Moines 156; Frontier 940, 1732; Indianapolis 174; Ithaca, N. Y. 2120; Kansas City, Mo. 1476*; Latter day saints 1989*; Lexington, Ky. 127; Los Angeles 423, 849; Louisiana State U. 763; Louisville, Ky. 176; Lower Ohio 66; Madison, Wis. 1789*; Milwaukee, Wis. 796, 976; Mobile, Ala. 205, 1808; Nevada 524; New England 2035; New Orleans 69, 113, 1262; New York 811, 1023, 1123, 1280, 1374, 1375, 1618, 1947, 1949, 2226, 2227, 2291, 2512, 2524*; Ohio 846; Oklahoma City 1954; Pasadena 409; Rochester, N. Y. 1997, 1999, 2286; St. Louis, Mo. 71; St. Paul, Minn. 1950*; Salt Lake City 818; San Francisco 526, 1995; Seattle 2008, 2040, 2048; Sioux City, Ia. 999; South Bend, Ind. 1110; Southern Utah 858; Southwestern Mississippi 1899*; Tombstone, Ariz. 813; U. of N. Carolina 1968; Zanesville, Ohio 1966.]

Lore of 611; Lyceum 401; MacKaye and Belasco 1278; Management 1595; Melodrama 516, 1108; Moliere 2320; Nativity plays 1505; Negro drama 243, 467, 493, 588, 625, 1165, 2016, 2341*, 2469; Opposition to 299; People and 684*; Physical condition of 2492; Playwrights 2317; Politics 2015; Producing agents 1282; Professional 330, 423, 524; Propaganda 1144, 1698*, 1705*, 1774, 2127*; Rip Van Winkle tradition 456; Realism 1843*; Regionalism 2018; Romanticism 2125*; Scenery 307; Shakespeare 975, 1949; Showboats 455, 2335; Soliloquy 360; Summer theatres 1933; Stage decoration 606, 701; Stage Indians 2019; Stock Companies 78; Theatrical syndicate 1100*; Travelling companies 1274; Women in 570, 1533; Fallen woman 2021; 47 Workshop 486; World War I 2246; Yankee Character 641, 2007, 2297.

History of the Theatre—General: Acting 293, 429, 445, 1486; Architecture 600; Catholic Church 499; Comic characters 314; Costume 753, 843, 1255; Cycles 1604*; Dance and 1197; Directing and producing 1970; Direction 687; Eighteenth century dramaturgy 880; Expressionism 444, 896, 902*, 957; Faust 1098; Graphic arts 1605*; Greek influence 328, 458, 589, 850; Heroic drama 644; Lighting 841, 1117; Masks 315, 517, 604, 707; Meteors 2371; Modern 716, 836, 2450, 2452*; National theatre 1286; Naturalism and realism 721; Negro in 243, 2341*; Pantomime 520; Perspective in scene design 195; Pictures 722; Physical stage 269; Producing 811, 1970; Production of Goethe's Faust 1098; Puppetry 480, 487, 506, 528; Radicalism in 579; Realism 721, 1208*; Scenery 307, 448, 449, 605; The school in 244; Shakespeare 703; Social attitude 814; Stage and auditorium 448; Stage effects 1038; Stage and screen 2330*; Status of theatre 1690; Summer theatre 1933; Theatre at war 2488; Tragedy 318; Unities 851; Victorian ethics 1354; Women playwrights 2289.

Lighting: And the actor 1056, 2164; In America 452; Audience reaction to 1056, 1630, 1649, 2164; Color in 308, 343, 1649, 2164; A course in 886; Degrees of 1630; Distortion of 1064; Distribution of 2093; On faces 1056; And form 2093; For *Francesca da Rimini* 1894; Fresnel lenses 1643; High school stages 214; History of 316, 452, 841, 1117, 1691; A house 1801; Hue cycle 343; *Johnny Johnson* 1438; A layout 1801; Science of 308; Spotlight design 1112; In a university theatre 170; And visual efficiency in 1237.

Make-Up: History 473; Methods 345; Stage 657.

Masks: Court 1932; Development of 604, 707; In dramatic production 763; History of 315, 517; A mask 592; Use of 604.

Motion Pictures: Acting in 1512, 2091; Bibliography 2053; Teaching with 1942, 1944; Technique of 471; Stage and 1512, 2091, 2330*; Wishful thinking in 550.

Music: Appia on 694; And drama 727*; Supplement to 65.

Pageantry: California 447; History of 407;

New Mexican 787; Religious 2369; Secondary schools 507.

Plays: Act and scene division 2285; Antecedent action in 994; Attitudes toward the Negro in 1165; Attitudes toward war 1023; Biographical 1281; Broadway 1618, 1947; Character in 1033; Characterization in 277, 388, 1947, 1996, 2016, 2069; *Claude's Wife* acting version of 344; Climax 2245, 2284; Comedy in 46, 89, 281, 297, 314, 453, 615, 635, 2070, 2122*, 2361, 2383, 2451*; Comedies 2361; Confidants 355; Construction of 288, 587, 613, 1900, 2282; Copyright law 739; Czech 2427; Dialects in 469; Dialogues in 53; Direction in 1124, 1138; *The Distance* by Lupez 532; The *Dybuk* background 439; Electras 637, 804; *El Poder de la Palabra* 1215; Empathic response and endings 613; Ethics 827, 1354; Exposition in 385, 798, 994, 1124; 1489, 2245, 2352; Expressionism 444, 896, 902*, 957; Fallen woman in 2021; Feminism 303; Folk 324, 1543, 1729; Forensics 824; *Gli Asolani* 1844*; Greek 328, 587, 597, 850; *Henry IV* 277; Hero in 334; Heroic 644; Hokum 513; Imagery in 1168, 1196*; Instinct 828; Introduction 288; Irony in 1560*; Literature for 374; *L'oeuvre d'art Vivant* 700, 2017; *Los Postures* 781; Louisiana 763; Melodrama 365, 516, 638, 708, 1108, 2035; Monodrama 1213; Music and scene 694; Naturalism in 721; Negro in 243, 467, 493, 1165, 2016; One-act 1497, 1504; O'Neill 1693; Oratory in Shakespeare 1158; Original 134, 177, 178, 373, 408, 578, 752, 763, 782, 887, 933, 948, 950*, 980, 1048, 1072, 1074, 1111, 1202, 1207, 1211, 1212, 1294, 1296, 1368, 1369, 1403, 1417, 1447, 1495, 1497, 1504, 1524, 1569, 1574, 1578, 1580, 1609, 1611, 1613, 1650, 1654, 1711, 1730, 1790, 1799, 1804, 1809, 1847, 1852, 1872, 1878, 1889, 1901*, 1915, 1917, 1945, 1984, 1992, 2004, 2075, 2092, 2096, 2134, 2159, 2168, 2172, 2176*, 2251, 2278, 2303, 2359, 2409, 2438, 2454, 2455, 2479, 2482, 2507; Pageants 407, 447; *Paola and Francesca* 1712; Persuasion in 1044*; *Phaedra* 494; *Pillars of Society* 970; Plot construction 1900*, 2282; Poetic 2450; Politics 2015; Propaganda in 963, 1144, 1698*, 1705*, 1774, 2127*; Psychology 475; And public 404; Pulitzer prize 670; Radio 616, 1261, 1439, 2127*, 2208; Realism 642, 721, 1208*†, 1585, 1843*, 2020, 2279, 2018; Regionalism 1226, 1454; Relief devices in 1885; *Richard III* 2197; *Rip Van Winkle* 2053; Romanticism 2125*; Sacred 2369; Selection of 8*, 56, 238; Sentimentalism 369; Short 2232*; Social dramas 267, 378, 479, 814, 831, 1023; Soliloquy 360; Spiritualism in 863; Structure 895; Symbolism in 1829; Technique in 328, 587; Themes 226*; Trinimus 2196; Tragedy 309, 318, 457, 878*, 1205, 1759, 2334; *Under The Law* 2339*; Unities in 1256; Universal standards 880; William Tell legend 1013*; Wish-fulfillment 550; Writing 134, 587, 702, 710, 1202, 1207, 1439, 2453*.

Prompt Books - Productions - Interpretations: *Abe Lincoln in Illinois* 1893; *The Adding Machine* 2098; *Admirable Crichton* 1522; *The Adventurer* 890; *Agamemnon* 916; *All for Love* 1462; *André* 1058; *Another Language* 206; *Antony and Cleopatra* 454, 1220; *Aren't We All?* 166; *Arms and the Man* 539; *As You Like It* 110; *The Baby Cyclone* 216; *Bartholomew Fair* 1245; *The Beau Stratagem* 1793; *Beggars' Opera* 1664; *Berkley Square* 146; *Beyond the Horizon* 1120; *Brutus* 1880; *Camille* 428, 1877; *A Case for the Coroner* 1373; *Caste* 1641; *Change* 470; *The Changeling* 1576; *Charles II* 972; *Claude's Wife* 344; *The Comedian* 939; *Comrades* 2011; *The Contrast* 2274; *The Critic* 1755; *Daughters of Atreus* 1437; *The Demon Barber of Fleet Street* 1132; *A Doll's House* 1131; *Down to Camelot* 400; *The Dragon* 805; *The Duchess of Malfi* 1109; *Dust to Earth* 1800; *Edward II* 1573; *Engaged* 1653; *Eight* Roles 2362; *Epicoene, The Silent Woman* 183, 1577, 1838; *Erasmus Montanus and Jeppe of the Hill* 1122; *Fall of British Tyranny* 1440; *The Farmer's Wife* 889; *Fashion* 411; *The Father* 2089; *Fils* 2431; *The Fires of St. John* 425; *Francesca de Rimini* 1223, 1568; *The Frogs* 946; *A Game of Love and Chance* 431; *Gammer Gurton's Needle* 2009; *The Gentleman Dancing Master* 1838; *Ghosts* 260, 2012; *The Girl of the Golden West* 990; *Girls in Uniform* 736; *The Good Natured Man* 1662; *Good Nubbins* 177; *The Great Galeoto* 421; *Gruach* 461; *Hamlet* 427; *Hazel Kirkel* 1246; *He Who Gets Slapped* 65; *Henry IV*, Part I 942, 2350; *Holiday* 746; *Home Sweet Hollywood* 1372; *The Importance of Being Ernest* 2491; *Inheritors* 141; *Ingomar—The Barbarian* 408; *Iphegenia in Tauris* 484, 1385; *Juno and the Paycock* 1129; *Jungle Lore* 1296; *Keepers of the House* 2086; *King Lear* 1229; *King Richard II* 882; *The Knavery of Scapin* 1015; *Knights of the Burning Pestle* 173; *The Lady of Belmont* 786; *Lady Macbeth* 1709; *Lady Precious Stream* 914; *The Life of Man* 1346; *The Light O'Love* 2010; *Liliom* 497; *The Little Clay Cart* 1057; *London Assurance* 924; *The London Merchant* 396; *Macbeth* 2422; Major roles 2467, 2473; *Marco Polo* 1711; *Margaret Fleming* 2100; *The*

†This thesis was originally listed by error as a Master's thesis.

Master Builder 1564; *Measure for Measure* 2223; *Media of Euripides* 218; *The Merry Wives of Windsor* 927; *Michael and the Lost Angel* 2099; *Midsummer Night's Dream* 327; *Minna von Barnhelm* 460; *Miracle de Notre Dame* 1583*; *Le Misanthrope* 1803; *Mistress of the Inn* 1802; *Mostellaria* 1566; *The Mourning Bride* 915; *Much Ado About Nothing* 1982; *My Lady's Dress* 164; *My Servant Job* 1579; *Nathan the Wise* 1562; Nativity plays 1956; *A New Way to Pay Old Debts* 1466; *A New York Idea* 130; *Night Justice* 1570; *The Octoroon* 1078; *The Old Bachelor* 1888; *Once Upon a Time* 1572; One-act plays by G. B. Shaw 993; The Orestean Triology 2169, 2358; *Our American Cousin* 1644; *Outside of Us* 1575; An original play, 134, 373, 408, 752, 1072, 1074, 1417, 1447, 1646, 1650, 1654, 1809, 1872, 1878, 1889, 1901*, 2075, 2168, 2172, 2176*, 2359, 2482; *Paola and Francesca* 780; *The Passing of the Third Floor Back* 418; *The Patio Sun* 420; *Philester* 745; *Pillars of Society* 2354; *The Playboy of the Western World* 1000; *Portia* 1499; *Precious Land* 948; *Preview* 1571; *Pygmalion and Galatea* 2162; *Ralph Roister Doister* 1192, 1581, 1838; *The Red Tooth* 390; *The Return of Peter Grimm* 910; *Richard II* 1238; *Richard III* 1449, 1582, 2197; *Richelieu,* 1881; *Rip Van Winkle* 2357; *The Robber* 143; *Romeo and Juliet* 64; *Rosmersholm* 2095; *Royal Family* 135; *Saint Joan* 82, 1432; *Saturday's Children* 751; *A School for Scandal* 806, 1636; *A Scrap of Paper* 888; *The Servant in the House* 414; Shaw's plays 993; *She Stoops to Conquer* 2499; *Shore Acres* 1247; *The Silver Cord* 1126, 2087; *Solnedgnag* 430; *So This Is London* 748; *The Spanish Student* 1427; *Stage Center* 1795; *Storm Warning* 1565; *Sun-Up* 424; *The Sunken Bell* 1757; *Taming of the Shrew* 474, 2386; *Tartuffe* 450; *The Tempest* 67; Three One-act Plays 1458, 1878; Three different roles 1661, 1670, 2158; *The Thunderstorm* 883; *The Ticket of Leave Man* 985, 1626; *Tortesa, The Usurer* 1424; *The Tragedy of Tragedies, or The Life and Death of Tom Thumb the Great* 1134; *Tragic History of Dr. Faustus* 472, 1232, 1333; *Treble Clef* 2090; *The Tree* 178; *Trelawney of the Wells* 1371; *Trinimus* 2196; *Twelfth Night* 187, 474, 1140, 1943; Two roles 1624; *The Trojan Women* 2237; *Under the Gas Light* 391; *The Vultures* 889; *Vikings at Hedgeland* 1436; *The Way of the World* 936; *The Wheel* 1563; *The Wild Duck* 884; *The Winter's Tale* 2013; *The Women Have Their Way* 607; *Zaragueta* 885.

Puppetry: Bibliography for 2046; In college theatre 2248; English 1162; History of 480, 487, 528; Manual on 155; Oriental 487; Powell's 506; And theatre 699.

Religious: Audiences 596; Bible story in 398; Catholic Church 499; Choral reading in 2209; Contemporary 1362; Costuming 843; Denver 2343; Education in 1814, 2132; English 1860; Experiments in 944; In Georgia 1905; Handmaid of 397; Miracle plays 2182; Nativity plays 1956; Pageantry 2369; Plays 1847, 2134, 2176*, 2369; In Protestant Churches 1882; Teaching 531.

Stage and Theatre Design and Construction: American decoration and 606, 701; Analysis of 1980; Art principles in 108, 712, 2441; The auditorium 448, 1724; Buildings 1602; Effects on 1038; Elizabethan 992, 998; Equipment 6*; Evolution of 448, 605; Forestage 2336; Form and light 2093; Globe Theatre 1443; Grand Tabor Opera House 1608, High School 68, 1724, 2200, 2480; History of 160, 195, 269, 307, 448, 449, 600, 605, 890, 1038, 1264; Hue cycle 343; Inigo Jones 249; Modernism in 890 1264, 2485; Perspective in 195, 1184*; The physical stage 269; The proscenium arch 889, 2336; Roman 1648; Scenery 80, 449, 2480; Scene shifting 210; The space stage 240; Technical design projects for: *L'Amore Dei Tre Re* 1792; *Another Language* 206; *The Dawn* 1655; *Le Diable Boiteux* 1567; *Don Carlos* 1452; *The Gondoliers* 2094; *The Great God Brown* 1794; *The Jew of Malta* 1851; *Marco Millions* 2144; *Miracles de Notre Dame* 1583*; *The Mourning Bride* 915; *Paul and the Blue Ox* 1222; *Peer Gynt* 1413; *The Pretenders* 191; *Quality Street* 1876; *Sadko* 1370; *The Sunken Bell* 1241; *The Tempest* 1797; *Twelfth Night* 1980; *Union Pacific* 1791; *The Wasp* 1230; The unit set 886, 998, 1594; University theatre 80; Visual aspects 712. See also *Costuming-Lighting.*

Speech Pathology

Analysis: Aments 2295; Aphasics 1190, 1687, 2323*; Of babies 1958*; Barbaralalia 1004; Behavior problems 1733, 1928; Bibliography for 1765; Birth order 2486; Of the blind 1085, 1380; Case history 548; Cardiac cycle 1101*; Childhood diseases 1930; In children 1014, 1190, 1277*; And classification 1807, 2393*; Cleft palate 1493, 1534, 2265, 2267, 2268, 2269, 2270, 2345, 2387; Clinical 192, 1081*; College freshmen 1304; Colored and white children 219; Comparative studies of defectives 1014, 1884; Delayed speech 1,1733, 1734*; Deviants 2393*; Dextrality 196, 441, 464, 555, 737, 738, 779, 920, 966, 1224, 1317; Diabetes mellitus and epilepsy 1027; Diagnosis 393, 1953; Dysphonias 1328; Emotional ad-

justments 543, 621; Encephalitis 618, 627; Endocrinopathy 628; Family backgrounds 1500; Feeble minded 677; Functional hoarseness 2381; Hand size and 1102*; Hyperthyroidism 1534; Inheritance 2345; Lip movements 329; Mental defectives and 1884; Mirror reading 215; Mongolism 1019; Muscle latency 758*; Obstetric anaesthesia 2375; Organismic development 1694; Paralalia 1156; Physical abilities and defects 1920; Race differences in 219; Rhythm in 116, 341, 553; The self 194; In small schools 1069; Sociological causes 248; Spastics 1105, 1492, 1972, 2415; Suggestibility 794; Symptoms 760*; Tempo of deaf 1006; Terminology and definitions 1823*; Tone 201; Uraniscolalia 1153; Voice changes 989.

Articulation: Accent 386, 623, 870, 1029; Correction of 1770, 2085*, 2343; Deviations 2393*; Diadochocinesis 1544, 1545, 1553; Dialects 86, 116, 126, 341, 386, 469, 812, 870, 997, 1029, 1391*, 1392, 1484*, 1621, 1681, 1683, 1684*, 2085*, 2110*, 2105, 2186, 2188, 2249; Dialect melody 341; Difficulty of 1147; Disorders 106, 121, 131, 148, 929, 1620, 1864, 2260, 2272; Of feeble minded 2056; And hearing 1502; Laterality 929; Lisp 47, 54, 2387; Maturation and 1620; Oral inaccuracy 106, 121, 131; Organic defects 148, 682*, 1431, 1748, 2345; Sigmatic defects 1931; Sound discrimination 1864; Stuttering and 62, 735, 1991*, 2310. See *Phonetics* under FUNDAMENTALS OF SPEECH, and same under EDUCATION.

Hearing: Acuity 1031*, 1178*, 1546; Acuity and the feeble minded 1307*; Aids 1815, 1862; Auditory factors in articulation 239, 622, 1178*, 1379, 1502, 1685*, 1969*, 2149; Audiometer and other tests 820, 1031*, 1480, 1542, 1762, 1862, 2272, 2292, 2322, 2346, 2347, 2464, 2477, 2517, 2518; Cinematographic technique 1969*; And cleft palate 2055; Comprehension 213; Defects and 73, 239, 622, 1379, 1969*; Deficiencies 1178*; Discrimination and 73, 582, 1518, 1685*, 1812, 1864, 1971, 2272, 2276; Education of hard of 1379, 1728, 2244, 2464; Electrical phenomena in 680*; Lip reading 2315; Loss of 1528, 1546; Mechanism 680*; Memory span 1177*, 1764; Music and 823; Normal hearing and stutterers 2230; Pitch and 73, 239; Remedial procedures 1728; Sensitivity and 2276; Speech and 865; Stutterers 2230; Surveys of 2428; Teaching 2523; Tempo 1006; Theories of 1862; Visual 1004, 2504.

History: Cleft palate cases 2345; Concept of stuttering 2283; History nineteenth century 1959*; Obstetric anaesthesia 2375; Of speech skill 2316; Treatment of stuttering 503, 1913.

Tests: Articulation 47, 186, 1418, 1615; Case history 548; Cinematographic 1969*; Denver-Collins test 820; Dextrality 737, 779, 920, 966; Fluency 2147; Of frequency deafness 1480; Hearing loss 1528, 1546, 2222; Hyperacusia 821; Lisp 47; Mirror reading 215; Motor tests 1510; Pitch 1356; Psychological 558; Questionnaire 779, 966; Speech 349, 393, 548, 671*; Visual tests of stutterers 1586*; Word association 822. See *Hearing*, and *Tests* under EDUCATION.

Therapy: For backward children 1143; Of cerebral dominance for stutterers 464; Cerebral palsy 1329; Clinical instruments 2131; Dramatics in 2521; Educational dramatics 636; Foreign accent 1391*, 2085*; Handedness as a 738; Hard of hearing 1728; History of treatment of stutterers 503, 1913, 1959*, 1979, 2283; Hoarseness 2381; Hypnotheraphy 1001; In medical clinic 1766, 1988; Oral reading as 1991*; Organic defects 148; Organismic 1694; Osteopathic 1141; Paralalia 1156; Part and whole method 121; Primary age children 2049, 2050; Psychiatric 1688; Psychoanalysis and 774; Relaxation 1858; Response and stimulation 181; In small town 1069; Of spastics 1105, 1863, 1972; Of speech correction programs 626, 1535, 2049, 2050, 2407, 2435; Of speech errors 234; Of state and federal legislation 1890; With stroboscope 239; For stuttering 464, 738, 749, 856, 862, 1913, 1979; Theories 773; Uraniscolalia 1153; Whole and part method 121. See *Methods* under EDUCATION.

Stutterers: Adjustment of 4*, 202, 543, 621, 1106, 1316, 1386*, 1642, 2411*; Analysis of 652, 760*, 1190, 1239, 1421; Articulation of 62, 735, 1068, 1420, 1435, 1991*, 2310; Attentional clearness 954*; Attitudes 1106, 1316; Avoidance in 1061; 1075; Auditory perseveration in 2003; Biochemistry of 683*; Blood groups of 1756, 1782; Breathing of 103, 224*, 1400, 1421, 1468*, 2204; Case history 196, 1180*; Causes and therapy of 1979, 1991*; Cardio-vascular and metabolic study of 1902*; Cerebral dominance and 196, 441, 555, 737, 738, 779, 920, 966, 1081*, 1224, 1317, 1740; Clinical study of 1638; Conditional reflex and 953*; In college texts 1239; Diseases of 392, 1027; Diadochocinesis of 1544, 1545, 1553; Duration of 1434; Electroencephalographic study 1990*; Expectancy of 943, 945, 947; And exercise 1629; Eye movements of 955*, 1553; Family study 1638; Frequency of 943, 945, 1081*, 1434, 1991*; Handedness 196; Historical study of 502, 1913, 1979, 2283; Hypnotherapy in 1001; Inheritance of 668, 1365*, 1500, 1638, 1717, 2465; Intervals in 1459; Intramuscular pressure and

1704; Latent tetany in 233*, 758*; Listeners to 1047, 1419, 1430; Laterality and writing 1825*; And lip reading 2230; Medical history 1180*; Mirror reading of 215; Motor capacities of 224*, 232*, 233*; Oral reading and 937, 1703, 2146, 2273; Own theories 1635; Parental age 1717; Perseveration in 2002, 2003, 2143, 2430; Personality and 1386*, 2411*; Precipitation of 1067, 1076, 1081*; Psycho-analysis 774, 2503; Recitation problems of 1062; Rhythm 553; Silent reading 1586*; Speech of 1190; Sound waves 1412; Suggestibility 794; Symptoms 760*; Tensions of 1073; Theories of 760*, 856, 862, 1152; Treatment of 749, 1913; Twinning families and 2140, 2465; Visual perseveration tendencies of 2002; Voice and 201, 1468*; And words 937; And word length 1703; Writing of 1825*.

Surveys: Baton Rouge, La. 234, 1092; In California 1321, 1515; Canyon, Texas 2424; Catholic schools of Madison, Wis. 546, 547; Catholic high schools of Milwaukee 2368; College freshmen 39, 1304; Danville, Ill. 2141; Elementary school 1298; Everett, Wash. 1155; Families of defectives 1500; Granite, Utah 860; Hebrew clinic 2; Ingham County, Mich. 2394; Portales, New Mexico 2442; Puyallup, Wash. 1154; Salina, Kansas 2443; Salt Lake City, Utah 857; Seattle, Wash. 1746; State of Washington 1157; White House Conference 594. See *Surveys* under EDUCATION.

EDUCATION

ANALYSIS OF NEEDS AND ABILITIES: Academic record 1347; Articulation 47, 186, 1620; Attitudes 969, 971; College students 37, 60, 63, 70, 74, 77, 159, 188, 209, 211, 213, 226*, 741, 743, 971, 1052, 1231, 1244, 1304, 1331, 1453, 1470*, 1530, 1610, 2186, 2192, 2254, 2366; In debate 142; In dramatics 488, 529, 1053, 1625, 1632, 1658; Elementary school 619; Engineering students 1052; In English and expression 829; General 35, 87, 241, 245, 349, 393, 435, 441, 495, 1347, 2255; High school 38, 189, 382, 495, 1029, 1221, 1228, 1243, 1422, 1502, 2145, 2165, 2193*; In living 1389*; Low grade students 1453; For military speech 2254; Normal 2462; In oral reading 261; In oral and silent reading 1327; In radio 1420; Rural pupils 1051; In self-analysis 194; Small schools 1069; From speech experiences 1896*; Speaking and singing 2319; In stage fright 380; Superior students 87; Teachers 1082*, 1263, 1426, 2349; Vocabulary 1236. See also *Fundamentals courses* and *Testing* in this section.

Articulation and Pronunciation: Analysis of 1244, 1331; Auditory factors in 2149; College freshmen 63, 70, 1414; Dialects 1621, 1681, 1684*; In dramatics 76, 85; Drills for 72, 179, 926, 935, 1050, 1055, 1242, 1683; Elementary schools 72, 1418, 1620, 1770; Errors 1221, 1243, 1490, 1869; Exercises 59, 72, 106, 116, 121, 131, 148, 399, 926, 930, 935, 997, 1050, 1055, 1083, 1087, 1088, 1193*, 1221, 1242, 1243, 1391*, 1490, 1681, 1683, 1684*, 1904, 2085*, 2407, 2443; Foreign accent in 1391*; 2085*; Handbook for 1087, 2407; And hearing 1502; High schools 1490; Lisp 47, 54; Nursery 2114; Place in speech training 40, 679*; Practical training 399; Sibilant sounds 874; Sixteenth century 1820; Symbols used in texts 1235; Tests 47, 186, 1418, 1490, 1615, 1685*, 1953, 2405, 2477; Tongue in 2213. See *Phonetics* under FUNDAMENTALS, and *Articulation* under PATHOLOGY.

Assembly or Auditorium: Bibliography on 1017; Commencements 1397; Educational factors in 523, 2047, 2299; Efficiency 667; Junior high 2299; Platoon schools 500; Secondary school 1724, 2299; Stages 1724; Value 1096.

Bibliography: American Films 2053; On assemblies 1017; Of correction 1765; Field of speech 1336; Of puppetry 2046.

Books-Manuals-Syllabi: On accent 2085*; On acting 1423; On argumentation 58, 2189; For amateur theatre 1113; Clinicians 1807; For correction 101, 1087, 1239, 2049, 2050, 2407; Debate 58, 90, 585, 1090, 2436, 2437; Diction 179; For dramatics 120, 137, 145, 179, 1113, 1423, 1634, 2030; Elementary school 574, 1810; English texts 1446, 2264; For interpretative reading 75, 306, 374, 527, 658, 1645, 2104; Oratory 981; Pathology 101; Pitch treatments 1667; For pronunciation 1683; Puppetry 155; Radio 1340; Science source book 681*; Secondary school 1032; On spastics 1972; Speech texts 783, 1235; Stuttering in 1239; On voice 158, 179, 278, 586.

Colleges and Universities: Beginning course 632, 1818, 2250*; Berry college 2508; Canadian 2111*; Class size 2065; Coe College 2460*; Curricula in 662; Debate and success in 199, 290; Debating 290, 325, 833, 1090, 1292, 2331*; Debate texts 90; Declamation and success in 741, 1326; Defects in 39; Disputation in 1903*, 1987, 2363*; Drama services of 551; Dramatics 319, 331, 1053, 2111*; Fordham University 1195*; Graduates 2178*; Graduates and success 620; Greek plays 1194*; Group tests in 77; Howard University 1874; History 413; Indiana 1561*; Institutions 1815; Instruction in 413; Integration in 2403; Interpretative reading 560, 1824*; Iowa graduates and 1477*, 2178*; Junior colleges 518, 1898*, 1928; Oratory in 311, 325, 375, 410, 559, 826, 834, 1310; Plays for women 8*;

Puppetry 2248; Radio 1326*, 1558*, 1817; Regional speech in 812; St. Mary's of Notre Dame 1390*; And secondary school training 125; Speech needs 226*; Speech training 2432*; Talladega 2333*; Teaching in 276, 1010; Theatres 2471; Theatre building 80; Theatre lighting 170; In the United States 1010; University of Wisconsin 2074; Voice study in 1331; Wartime curriculum 2421; Wayne University 1751.

Curriculum-Courses of Study: And academic recognition 1121; Alabama 1187; Berry college 2508; Characterization 136, 137; Contests and 511; Correction 626; Elementary teachers 1750; Evaluating 2109; Experiences in 1896*; Fordham University 1195*; Fundamentals 1754; Howard Dramatics 1874; History of the 1359; Integration in 435, 829, 962, 986, 1319*, 1335, 1769, 1826*, 2299, 2403; Junior high school 866, 1225, 1228, 2193*; Long Beach, N. Y. 2108; Los Angeles 1319*; Louisiana dramatics 665; Missouri 91; Pathology 626, 1765; Promotion units 2300; Public school 2214; Radio speech 1248*, 1326, 1558*; Reading 1824*; St. Mary's 1390*; School of speech 1195*; Small high school 171; Stage lighting 866; Speech tournament and festival 2519; South Dakota 1139; State program 665; Study, course of, 91, 446, 632, 762, 815, 1225, 1228, 1283, 1319*, 1326, 1828, 2109, 2117, 2214, 2275, 2349; Talladega College 2333*; Teacher 2301, 2306, 2349; University of Wisconsin 2065, 2074; Waco, Texas 1448; West Virginia dramatics 165; Winner, S. D. 2275.

Debating and Discussion: Achievement in 917; Book on 58, 90, 585; College 142, 199, 290, 743, 853, 1090; 1292; In colonial colleges 2331*; Critic judge in 351; Decisionless 286; Decisions 906; Disputation 1903*, 1987, 2363*; Effects of 199, 511, 2080*; Evaluation of 114, 422, 2080*, 2206; Junior high 2121; High school 58, 422, 451, 917, 1483; Logic in 512, 2189; And personality 1376; Program for Louisiana 1483; Success and 142, 199; Survey 451; Types of 1292; University 142. See same under FUNDAMENTALS.

Dramatics: Acting exercises 94, 593, 2495; Action in 172, 561, 1217; Actors 140; Adaptations for 805, 1127, 1130, 1296; Adolescents 1964; Aims and standards 52, 219, 840; Appreciation 488; For the blind 1380; Books 120; Camp 295; Canadian Universities 2111*; Characterization 99, 105, 126, 405; Children's 119, 287, 1822*; Climax in 1668; Clubs 133; Colleges and puppetry 2248; Commedia del' Arte 453; Courses 136, 137, 145, 168, 561; Costuming 983; Creative 317, 977, 1779; Development in 1251*; Diagnostic studies 1625, 1632, 1658; Drill book 179; Effect on scholarship 1763; Elementary school 287, 317, 645; Equipment for 6*; Exercises for 94, 96, 99, 105, 126, 168, 172, 220, 1309; Functions of 53, 840, 977, 1520, 1779; Greek plays 1194*; Howard University 1874; High school plays 909; High school talent 911; High school technique 1508, 2210; Institutional 740; Junior high 519, 1164; Junior playmakers of N. Dakota 967; Lighting courses 886; Mental hygiene 576; Pageantry 507; Pantomime 172, 561; Personality development 730; Plays for 8*, 46, 56, 238, 242, 909, 993, 1077, 1127, 1130, 1539, 2153, 2311, 2382, 2408; Problem children 227*, 636, 977; Production in 242, 319, 331, 769, 892*, 1217, 1309, 1508, 2201; In progressive education 1088, 1779, 2066; Puppetry 480, 2248; For radio education 2061; For religious education 1814, 2132; Rural 2312; Seminaries 331; Secondary schools 46, 95, 133, 145, 165, 214, 227*, 242, 323, 339, 376, 403, 507, 519, 612, 662, 840, 1254*, 1325, 1508, 1523, 2153, 2200, 2201; Secondary school stages 68, 2200; Services 55; Shaw's plays 993; State program 165, 665, 762, 967, 1625, 1632, 1658, 2150, 2155; Story telling and radio 2061; Students in 488, 1053; Talent for 102, 911; Teaching 172, 561, 742, 744, 892*, 1523; Tournaments 891*; University 80, 1874, 2111*. See entire Division of same title.

Elementary School: And adult contacts 877*; Articulation in 72, 1418, 1620, 1770, 1869; Assemblies 1017; Correction in 1535, 2049, 2050; Creative dramatics 317, 977, 1779; Curricula 1588*, 2310; Diagnosis 2255; Dramatics in 119, 168, 645, 1309, 1822*; Drill book 1683; English of 1684*; In England and the United States 5*; Handbook for 1810; Integration in 1686, 2456; Interpretation in 566; Linguistic abilities 1547; A manual 574; Mexican dialects in 1684*; Motivation of 568, 1309; Music and 823, 2319, 2456; National College of Education and 1957; Opportunities 1342; Poetry for 1025; Problem students in 1298; Program for 815, 2275; Radio for 651, 871, 2061; Rate 1855; Rhythm development 2426; In rural schools 1051; Sex differences in 619; Supervision 1663; Teacher's pronunciation 1727; Teacher training 1750, 1810, 2301; United States Survey 847; In Winner, S. D. 2275.

Exercises: Acting 94; Articulation and pronunciation 59, 72, 106, 121, 131, 148, 234, 926, 930, 935, 997, 1050, 1083, 1088, 1193*, 1242, 1683, 1904; Articulation 1083; Assignments 1448; Characterizations 105; Debate 585, 2436, 2437; Dialect 997, 2085*; Diction 179, 399; Dramatic art 168, 220; Drill materials 742; Elementary

grades 574; Pantomime 172, 934; Poetry 1025; Reading 149, 912, 922, 1415, 1450; Remedial 245; Speech correction 1087; Voice for 158, 399, 586, 1450, 1667. See *Methods* and *Theories* under EDUCATION and *Therapy* under SPEECH PATHOLOGY.

Fundamentals Courses: Adjustments in 1231; Analysis of students in 34, 60, 63, 70, 74, 77, 87, 159, 188, 209, 211, 213, 220, 226*, 245, 743, 744, 1052, 1231, 1244, 1347, 1414, 1453, 1470*, 2186; Bodily action in 188; Courses in 245, 540, 608, 632, 762, 1818, 2250*; Course test 2356; Diagnostic tests in 77; Dramatic art in 168, 220, 730, 744; Grades and 60, 87, 159, 1347, 1453; Job analysis for 245; Language in 211; Pedagogy of 762, 907, 908, 1754; Psycho-galvanometer in 907; Reading in 149; Speech comprehension in 213; Speech sounds in 926, 935, 1414; Status 540.

History: Beginning speech 540; Books on speech 75; Changing concepts 2374; Church of the Latter Day Saints 859; Colleges and Universities 413, 1359; Debate in colonial colleges 2331*; Disputation 1903*, 2363*; Elementary schools 5*; Elocution 536; English and expression 829; Junior colleges 518; Lyceum in 401; Recent tendencies in 263; Speech organizations 595, 2057; Speech training in 2316; Teaching public speaking 531*; Tournaments 891*; In the United States 1097; In the war 2421, 2481.

Methods: For acting 593; For action 557, 1217, 1811; Adult contacts and 877*; In antiquity 13; Assignments 1448; With auditory deficiencies 1178*; Autobiographical 2395; Ayers 817; Bible story 398; For blind 1380; Case methods 932; Church organization 859; Clark 1289; Class room 1332; Class size and 2065; Correlating with music 962*; Creative dramatics 977; Critic judge 350; Community 2302; Cumnock 326; Curry 104, 274, 2104, 2364; Dialects 126, 997; For defectives 181; Delsarte 79, 301, 723, 1183*, 1679, 1908, 1911, 2190; Dewey's philosophy on 1617; Diction 399; Dramatics 317, 405, 319, 730, 742, 744, 1212, 1251, 1309, 1520, 1779, 2495; Drills in 742; Elementary school 1342; Elocution 534, 535, 536; Emerson on 498, 1696; Experimental 815, 1147, 1150, 1536, 1785*, 2221; For extempore speaking 1151; General 241, 272, 276, 305, 568, 617, 1146, 1536, 1921, 1923; For gesture 1811; Group speaking 1271*; History 413, 435; For individual differences 226*, 245, 2167; Individual vs. group method 2250*; Integrated programs 435, 839, 986, 1319*, 1335, 1769, 2403. Isocrates 1295; Mental hygiene 576; Models and rules 869, 1024; The monologue 2313; With motion pictures 1217, 1942, 1944; Motivation for 357, 568, 1309, 1324, 1520; Mulcaster 1820; Oral and written language 808, 829, 869, 986, 1024, 1339; Oratory 12, 13, 15, 1310; Originality 405; Pantomime 172, 561, 934; Pedagogy 908; In phonetics 40; Phonokinesigraph 1250*; Pitch control 1093; In poetry 1025; Progressive education 1779, 1785*, 2066; Projection 956*; Pronunciation drills 12, 926, 935, 997, 1050, 1055, 1088, 1193*, 1242, 1683, 1904; Psycho-galvanometric 907; In use of public speeches 1498; Quintilian 15, 1682; Radio 609, 766, 871, 1334, 1341, 1348; Reading 149, 268, 282, 541, 730, 922, 982, 1071, 1251*, 1450, 1614, 2252, 2364; Recording equipment for 685*, 1332; Response and stimulation 181; Rush 279, 2195*; Score sheets 123; Small schools 1069; Speech sounds 1088; Stimulating the imagination 982; Tournaments 891*, 1236; Voice 49, 279, 282, 399, 490, 1093, 1450, 1516, 1667; Wayne University 1751; Whole vs. part 121; Woolbert 1541, 1696.

Oral Reading: Appreciation of literature 510, 1816; Authorities on 1011; Books on 75; Children's 566; Choral 768; Clark 1289; College teaching of 1824*, 2258; Courses in 560; Curry 104, 274, 2104, 2364; Declamation and 741; Delsarte on 79, 301, 723, 1183*, 1679, 1908, 1911; Effects of 729, 1251*; Errors in 1071; Exercises for 149, 658, 912, 922, 1025, 1415; Experiment in 1450; Imagination in 982; Interpretative 2104, 2258; Literature in 729, 1025, 1320*, 1813, 1816; Measurement of 261, 563, 1284, 1313, 1327; Methods of learning for 268; Radio 1550; Rate 1631; Secondary school and 2058, 2509; And silent 541, 1320*, 1327; Teaching 1450; Theories of 1330, 2364. See entire division on INTERPRETATIVE READING.

Radio: Aims and practices 1248*; Basic course in 1326, 1558*; College broadcasting 1773, 1817; Educational policy in 1666, Educational stations 2304, 2483; Elementary school 651, 871, 2061; High school 1348, 1527, 1550, 1627, 1749, 2184, 2203; In history 1348; Instructional values 609, 871, 1334, 1350, 1527, 1550, 1749, 1788*, 2061, 2203, 2307; Methods 1695; Religious education by 2520; Speech teaching in 766; Student training for 1326, 1420, 1753, 2184, 2203; Teacher training in 1753; Trends 2305; Writing for 1538. See entire division on RADIO.

Secondary Schools: Alabama 1187, 1806; Analysis of 2145; Argumentation 58; Articulation in 59, 1029, 1221, 1243, 1502; Assembly 523, 667, 1017, 1096; Assignments in 1348; Attitudes 971; Auditorium stage 1724; Books on speech 1032, 1087; Case method 932; Case study 1228; Cath-

olic 2368; Contests 115, 511; Conversation in 1402, 2446; Course of study 91, 446, 762, 1187, 1225, 1288, 1358, 1828, 2117; Courses in dramatic art 95, 133, 145, 165, 214, 227*, 242, 323, 339, 376, 403, 474, 519, 612, 805, 840, 909, 911, 967, 993, 1150, 1164, 1254*, 1296, 1325, 1508, 1523, 1552, 1964, 2445; Declamation 741, 1552, 2309; Debating 58, 422, 451, 917, 1483, 2080*; Debate leagues 114, 917; Dextrality of 1224; Discussion 2121; Dramatic clubs 133; Dramatic texts 1634; Dramatic tournaments 891*; Effects of 125, 422, 495, 1150, 1344, 1948; Evanston 382, 793; English and 1335, 1339; English texts 1446; Exercises in phonetics 59, 234; Florida 2214; Foreign accent in 1029; Forensics 2160; Integration 962*, 1319*, 1339, 1769, 1826*, 2403; Indiana 376; Institutes 1815; Iowa 1358, 2160; Junior high school 866, 1130, 1164, 1221, 1225, 1228, 1243, 1422, 2121, 2135, 2165, 2221, 2299, 2403, 2429; Language 1344, 1405, 1422, 1786*; Lighting 214, 2480; Long Beach, N. Y. 2108; Los Angeles 451, 468, 1319*; Louisiana 665, 762; Minnesota 583, 1283; Missouri 91; Music and 962; Needs and abilities of students 189; Northeastern Ohio 1723; Ohio 838; Oratory 2160, Pageantry in 507; Place of speech 583; Plays 8*, 46, 56, 242, 909, 994, 1077, 1127, 1688, 2153, 2311, 2382, 2408; Producing plays 994, 2201, 2382; Promotion units 2300; Radio 1348, 1527, 1550, 1627, 1666, 1749, 2184, 2203; Readings 658, 729, 1271*, 1415, 1450, 2058, 2509; Recognition of courses 1121; Small 171, 2071; Social relationships 1216; South Dakota 1139; Speeches in 1498; Speech education 468, 495, 542, 847, 2193*, 2221, 2435; Speech situations 2447*; Stages 68, 214, 2200, 2480; Students 38; Teacher training for 97, 861; Teaching literature 729; Tests 495, 1377, 1490; Theatre equipment 6*; Tournament 891*; Utah 861; Vocabulary 1405; West Virginia 165; Wisconsin 778, 2071; Word meaning 1216.

Surveys: Academic recognition of courses 1121; Alabama 1806; Attitude toward speech 2461; California 518; Changes in speech education 1097; Colleges and universities 276, 413, 518, 540, 662, 1010, 1097, 1561*, 1928; Debating 290, 422, 451; Dramatics 95, 323, 331, 339, 376, 519, 1254*; Elementary schools 847, 1342; Elocution in the United States 536; Evanston, Ill. 382, 583, 793; Florida 2214; High schools 95, 323, 339, 376, 382, 446, 451, 468, 519, 542, 583, 660, 778, 793, 847, 861, 1139, 1254*, 1283, 1288, 1319*, 1358, 1377, 1531, 1723, 1752, 1826*, 2071, 2108, 2109, 2214, 2257, 2366, 2429; History of 531*, 536, 1097, 1561*; Illinois 793; Indiana 376; Iowa 1358, 2429; Junior colleges 1928; Kansas 2457; Long Beach, N. Y. 2108; Los Angeles 451, 468, 1319*; Membership of N. A. T. S. 2057; Michigan 1752; Minnesota 583, 1283; National College of Education 1957; Nebraska 339; New England 1928; New York City 1377; Ohio 838, 1723; Oklahoma 422, 446, 660; Orphan asylums 1383; Pennsylvania 2257; Public speaking 531*; Private schools 305; Speech organizations 595; South Dakota 1139; Technique 1342; Utah 861; Wisconsin 778, 2071.

Teacher Training: Basis for 892*; Courses in 608, 2301, 2306; Elementary 1750; Graduate training of 1477*; High school 97, 2165; Language 1426; Manuals for 1807, 1810, 1972; Minimum 107; Needs 2349; In Oklahoma 446; Personality and 1404; In radio 1753; Speech for teachers 1082*, 1263, 1387*, 2083*, 2301, 2349; Teaching in 276; Undergraduate 2178*.

Theory: Of acting 698; Adult's contacts 877*; Ayres 817; Channing's 2473; Clark 1289; Cumnock 326; Curry 104, 274, 2364; Delsarte 301, 723, 1183*, 1908, 1911, 1679, 2190; Demosthenes 1200; Diet and 1702*; Development of a speech 1700*, 1701*, 1702*; Dewey 1617; Elocution 2364; Emerson 498, 2148; Functions of speech education 837; Fundamentals 1754; Isocrates 1295; Music and speech 962; Nature of speech 241; Newman 1870; Oral reading 1330; Oratory 15, 562; Origin 1584; Plato 1020, 1199; Psychological schools and speech 2076; Quintilian 15, 1682; Rhythm 1700*, 1701*; Role of speech education 1737*; Rush 278, 2195*; Ruskin 571; Socrates 2407; Tendencies in 263; Thinking-feeling-doing and speech 1736*; Woolbert 1541, 1695.

Testing and Rating: Acting 123; Aesthetic judgment 577; Articulation 47, 186, 671*, 1104, 1418, 1615, 1953, 2405, 2468; Attitude scales 969, 971, 1016, 1316; Audience 87, 1135*; Audiometer 1031*; Bernreuter 1463; California 2463; Case histories 548, 779, 966, 1228, 1234, 1285, 1868, 2145, 2395; Course tests 2356; Critic judges 350; Denver-Collins 820; Diagnostic tests 349, 393, 1377; In discussion 2271, 2287; Dramatics 1625, 1632, 1658; Emphasis 1148*; English 1335; Experiments in 1035*; Graded 671*; Group tests 60, 77, 495, 558, 2365; Hearing—see same and *Testing* under SPEECH PATHOLOGY; Hyperacusia 821; Inferior and superior speakers 37, 74, 87, 159, 220; Introversion 38; Judging contests 1173; Language 1344; Laterality 966; Lecturing 1337; Lisp 47; Motor tests 1510; Oral reading 261, 563, 1284, 1313, 1327, 1614, 1631, 2161, 2425; Pitch 1356; Platform speaking 1314, 1315; Profile 2255; Pronunciation 1104; Ques-

tionnaire 966; Radio 1334; Rating technique 1135, 2351, 2401*, 2448*; Reading 2161; Reaction time 1848; Recording 1332, 1857; Reliability of ratings 1856, 1857; Rhythm 656; Standard tests 495, 558, 1463, 1480; Stutterers 1316; Survey 1342; Text-books 527; Thematic 2410*; Visible symbolism 1784; Voice 1331, 1356, 2365; Wayne University 1751.

Values-Results: Aesthetic judgment 577, 729; Assemblies 667, 1096; Of contests 511; Correction 1535, 1770, 2133, 2327*; Court oratory 552; Debate 142, 199, 422, 917, 2080*, 2133; Dramatics 227*, 488, 636, 840, 964*, 972, 1251*, 1763, 1964; Elocution 534, 535; Emotional reaction 227*, 564, 576; English 1339; Experiment in method 808, 2250*; First course 159; Function in education 837; Grades 60, 1150, 1347; Group speaking 1271*; Integration 435, 962, 986, 1769, 1826*, 2299, 2403; Judging 1173; In mental hygiene 576; Military speech 2254; Oratory 410; For personality 34, 415, 730, 977, 1366*, 2073, 2440; Of plays 1964; For public speakers 459, 609; Radio 419, 609, 871, 1334, 1350, 1527, 1550, 1749, 2061, 2203, 2307; Of secondary school speech 125, 495, 511, 1150, 1344, 1948; Semantic 1442; Social emotional effects 227*; Speech education 125, 159, 227*, 620, 729, 930, 1334, 1335, 1344, 1737*, 1770, 2321, 2327*, 2432*; Of tests 495, 2356; Thinking 2240*, 2327*; Voice 49, 236, 419, 1252*, 2351.

A STUDY OF VOICE CHANGE IN BOYS BETWEEN THE AGES OF ELEVEN AND SIXTEEN*

CHARLES P. PEDREY, Lt. (j.g.), U.S.N.R.
U. S. Naval Hospital, Philadelphia, Pa.

Introduction

THE phenomenon of voice change and voice breaks has long been the subject of speculation among psychologists, teachers of speech, and others interested in adolescent boys. It is surprising, therefore, to find that so little systematic research has been done on the subject, and that writers have often been satisfied with casual observations or with repeating what someone else has written.

Perhaps the first written observation of change of voice and voice break was made by Aristotle, who definitely connected voice change with puberty.

With the publication in 1904 of G. Stanley Hall's *Adolescence,* interest in the problems of the adolescent was aroused. As yet the evidence consisted only of opinion, but with the focus of attention beginning to concentrate on the "teen" ages, there were soon to be students delving into the psychology of the adolescent, measuring height and weight, recording yearly increments in these measures, and unearthing facts from which evaluations could be drawn. Hall, like Aristotle, attributes the change of voice and the break in voice to the maturation of the genital organs, or pubic development.

It is interesting to note how close to the findings of experimental data at least one of Hall's observations is. He mentions that the adult male voice has had a drop of about one octave from its characteristic prepubescent level, an assertion that has been shown in the laboratory to be experimentally correct by Curry.[1]

Writers following Hall, and up to the last fifteen or twenty years, merely repeated his observations. Nor can one now find any study dealing with the rate of change in the adolescent voice, the psychological implications of the change, or the psychological and physiological concomitants of the voice break. In a recent book by Anderson we find this statement: "Let it be said in passing that at the present time too little is known of the voice of the pubescent child, how it develops, how it should be used and trained, and what changes may beset it, for any unnecessary risks to be taken."[2]

The lack of known facts does not deter many writers from making statements, too often based upon superficial observation of a few isolated cases, or upon the generalizations made by another writer after the observation of a few isolated cases. So far as can be found, no one has ever made an objective study of the embarrassment a boy experiences when his voice suddenly breaks into a squeaky falsetto, and yet a number of writers tell us that most boys are unduly self-conscious because of these squeaks.

*A condensation of a dissertation directed by Professor C. E. Kantner and submitted as partial fulfillment of the degree of Doctor of Philosophy at the Louisiana State University.

[1] Curry, E. Thayer, "The Pitch Characteristics of the Adolescent Male Voice," SM, (1940) VII, 48-52.

[2] Anderson, Virgil A., *Training the Speaking Voice* (New York, 1942), pp. 72-73.

In 1937, Eldon K. Jerome of the Mooseheart Laboratory for Child Research, making a study of the change of voice in adolescent males, used twelve boys in his research.[3] His purpose was to investigate the relationship among change of voice and chronological age, mental age, and skeletal age. Jerome feels that his most significant finding is that the skeletal age range in boys, within the period of voice change, is more restricted than either the chronological age or the mental age. He warns, however, that skeletal age may always be more restricted than either chronological age or mental age. He goes on to state that "the smallness of the group under study prohibits them [the facts] from being statistically significant."

E. Thayer Curry,[4] the other investigator credited with an objective study in boys' voices, set himself the problem of finding the characteristic pitch level of boys in three age levels. He selected six subjects at each of three different age levels: pre-adolescent (10 years), adolescent (14 years), and post-adolescent (18 years). He found a difference of about one octave between the pitch levels of the fourteen-year-old and the eighteen-year-old groups and concluded from this that the major shift in pitch comes sometime between the ages of fourteen and eighteen years.

That there is need for much more research in this phase of the adolescent period is evident. Information is needed about the length of the period of change; whether there is a strain on the larynx during the change; and what effects, if any, the breaks have on personality.

[3] "Change of Voice in Male Adolescents," QJS (1937), XXIII, 648-653.
[4] *Op. cit.*

Unanswered questions like these gave impetus to the present study. The problem that the investigator set for himself was: To make an investigation of the relationship of pitch level and voice breaks to pubic development and to age; to make a survey, both observational and retrospective, of the number of boys who experience breaks; and to attempt to determine the effects of voice breaks on the boy's behavior.

Procedure

A. *Selection of subjects*

Boys who had passed their eleventh birthday but had not yet attained the sixteenth birthday were used in this study. In setting the age span from eleven to sixteen years it was felt that at the eleven-year-old level the majority of boys would not yet be in the period of voice change[5] and that at the sixteen-year-old level most boys would be past the period of voice change. These age groups were determined upon after a study of the Jerome and Curry findings previously cited.

The boys were from the school systems (fifth grade and above) of Baton Rouge, Louisiana, and Greenville, Mississippi.

The number of boys included in the study was 1,014.

B. *Method of interview*

Each boy was asked to report to the room in the school building used by the investigator and interviewed individual-

[5] Whenever the period of *voice change* is referred to it means the period of greatest and most rapid change, occurring around puberty. We know that the voice changes from birth to death, that there is a continuous modification of pitch level in the voice. A child of ten does not have the same pitch he had at birth or when he began to talk. The voice will not be the same when he is forty as when he was twenty, and it will be still different when he reaches sixty.

ly. When he was seated he was asked to read—with no explanation and no opportunity to practice the material handed to him—a story with an average reading time of about five minutes.

As the boy read the investigator judged the stage of development of his voice: (1) was it a childish voice? (2) was it the voice of an adolescent in the process of changing? or (3) had it changed and acquired its adult characteristics?

In order to facilitate the keeping of records on each subject, a card was filled out for each individual. All items on the card except weight, height, and pubic development were checked at the first interview. The subject's name, age in years and months, the answers to the questions concerning previous experience with voice breaks and embarrassment caused by breaks, were filled in after the reading of the material. The stage of voice development and voice breaks[6] occurring during the reading of the material were checked while the subject read.

The weighing and measuring was done in the gymnasium when the boys went to their physical education classes. All boys interviewed were required to strip before stepping on the scales. As a boy stood on the scales to be weighed, his pubic development, using the criteria first described by Crampton,[7] was noted. If he had no pubic hair he was classified as 1; if his pubic hair was straight he was classified 2; if his pubic hair was kinky he went into classification 3.

[6] A *voice break* is here defined to mean a sudden and uncontrollable rise or fall from the characteristic pitch of the individual, a rise or fall which is definite enough to be heard by a listener. Obviously, if the break cannot be heard, it can have no effect on the auditor and we may question whether it has any effect on the speaker. In short, listeners cannot laugh at or deride a speaker because his voice breaks if they cannot hear the breaks, and one may well ask how much embarrassment the speaker feels when there is no such adverse reaction from his audience.

[7] Crampton, C. W., "Physiological Age," *American Physical Education Review*, XIII (1908), 144-154.

Presentation and Analysis of Data

A. *Voice change and relation to chronological age*

Table I presents the data on the percentage of boys in the three stages of voice change for each of the indicated age groups. It will be noted that, in general, the period of voice transition is the one with the greatest population. Since no longitudinal study has yet been made to determine the length of time it takes for a boy's voice to change, we can only guess at the duration of the period in which the voice is between the child's treble and the man's bass. We may guess that, on the average, the time extends over several years, for at no time during the age ranges used in this study were there fewer than fifty-five per cent of the boys whose voices appeared to be in the period of changing voice, and in age group 13 there were as many as eighty-five per cent in that transition period.

TABLE I

Distribution of Voice Stages by Age Groups

Age Group	N	Stages of Voice Development 1 Per Cent	2 Per Cent	3 Per Cent
11	154	38.31	60.38	1.29
12	232	19.39	78.01	2.58
13	215	8.37	87.90	3.72
14	228	1.75	78.07	20.17
15	185	.54	55.67	43.78

Table I reveals that of the 154 boys in the eleven-year-old group, 38.31 per cent were judged to have pre-adolescent or childish voices, 60.38 per cent had voices in the process of change, and 1.29 per cent had adult voices.

B. *Voice change in relation to pubic development*

We are now ready to consider the

question inherent in the problem set up for experimentation at the beginning of this study: Is there any relationship between change of voice and pubic development? If so, to what extent are these two items related?

The totals for column 4 indicate quite clearly a relationship between the process of change in the voice and the progress of physiological change. Slightly less than 23 per cent of the pre-pubescent boys have voices that have not yet begun to change, but only a few more than 5 per cent of pubescent boys and 1 per cent of post-pubescent boys have childish voices.

TABLE II

VOICE CHANGE IN RELATION TO PUBIC DEVELOPMENT

Age Group	P.D.	N	Voice Stage 1 Per Cent	2 Per Cent	3 Per Cent
	1	151	38.41	60.26	1.32
11	2	3	33.33	66.66	
	3	0			
	1	183	21.31	77.05	1.64
12	2	36	13.89	83.33	2.78
	3	13	7.69	76.92	15.38
	1	102	13.73	86.27	
13	2	69	5.80	94.29	
	3	44		81.82	18.18
	1	51	3.92	88.24	7.84
14	2	74		91.89	8.11
	3	103	1.94	63.11	34.95
	1	11		100.00	
15	2	27	3.70	81.48	14.81
	3	147		47.62	53.38
	1	498	22.69	75.50	1.81
Total	2	209	5.26	89.47	5.26
	3	307	.98	58.96	40.06

P.D.: (1) pre-pubescent, (2) pubescent, (3) post-pubescent.

In order to determine whether the relation between pubic development and voice change is closer than the relation between age and voice change, the boys studied were divided into three age groups, and cross tabulations were drawn for chronological age and voice change, and for pubic development and voice change.

TABLE III

AGE GROUP

Voice	1	2	3	Total
1	104	274	8	386
2	22	367	54	443
3	1	103	81	185
Total	127	744	143	1014

Age groups:
1 — 11 to 12.99
2 — 13 to 14.99
3 — 15 to 15.99

TABLE IV

PUBIC DEVELOPMENT

Voice	1	2	3	Total
1	113	376	9	498
2	11	187	11	209
3	3	181	123	307
Total	127	744	143	1014

To determine whether the relation between age and voice status could be due to chance, χ^2 was computed, using the method recommended by Goulden.[8]

TABLE V

AGE GROUP

Actual	Theoretical Normal	$(a-t)^2/t$
104	48.34	64.08
274	283.21	.29
8	54.43	39.60
22	55.48	20.20
367	325.04	5.41
54	62.47	1.14
1	23.17	21.21
103	135.73	7.89
81	26.08	115.65
	1013.95	$\chi^2=275.47$

TABLE VI

PUBIC DEVELOPMENT

Actual	Theoretical Normal	$(a-t)^2/t$
113	62.37	41.10
376	365.39	.30
9	70.23	53.38
11	26.17	8.79
187	153.24	7.38
11	29.47	11.57
3	38.45	32.68
181	225.25	8.69
123	43.29	146.77
	1013.96	$\chi^2=310.66$

The resultant χ^2 clearly demon-

[8] Goulden, C. H., *Methods of Statistical Analysis* (New York, 1939), pp. 88-100.

strates that one cannot interpret the distribution shown in the table to be a mere chance distribution. In a table yielding four degrees of freedom a χ^2 of 13.28 will arise by chance only 1 in 100 times. The χ^2 for Table V is 275.47. The obvious conclusion is that our figures are definitely not chance distributions. The same is true of Table VI.

From the χ^2 values derived in these two tables one can easily get a correlation of mean square contingency by the use of Pearson's[9] (C) formula:

$$C = \sqrt{\frac{\chi^2}{N + \chi^2}}$$

where N is the total number of observations (not the number of classes). The correlation between voice change and age was found to be .65, while the correlation between voice change and pubic development was .68.

C. *Frequency of voice breaks*

So much has been said in speech and psychological literature, especially the latter, about the frequency of voice breaks, that it was with distinct surprise that this observer noted only four breaks (one boy experienced two of these breaks) during the entire course of listening to 1,014 boys read for an average of five minutes each. Only four breaks in eighty-four hours of reading are certainly fewer breaks than earlier literature (and tradition) would have suggested.

True, the reading technique may not be the best technique for observing breaks in a boy's voice. Perhaps the best method would be to follow a boy throughout each entire day for a week so that he might be observed through a variety of situations, but it is questionable what results such a method would produce. Time was spent sitting through several class hours listening for breaks, but none were observed.

The next question was how often the boy himself had been aware of breaks, if at all. Each boy was asked if he had ever experienced any voice breaks, and if so, how frequently. Table VII tabulates the answers to this question.

TABLE VII

Age group	N	Has voice ever shown breaks? No	Once or twice	Three or five times	Often
11	154	87.66	1.29	11.03	
12	232	75.86	5.60	8.62	
13	215	67.44	7.44	24.65	.46
14	228	55.70	10.09	31.14	3.07
15	185	49.19	15.13	33.51	2.16

D. *Feelings of embarrassment caused by voice breaks*

Some writers have insisted that voice breaks are almost invariably accompanied by great embarrassment. Inasmuch as this concept seemed to be so prevalent, this study undertook to find out how many boys who reported the occurrence of breaks experienced a feeling of embarrassment when the breaks occurred. Table VIII presents the distributions according to age groups.

TABLE VIII

Age group	N	Amount of embarrassment, if any: No	Yes, but not much	Yes, a little	Yes, very much
11	154	98.21	7.79		
12	232	86.64	7.76	5.17	.43
13	215	79.07	11.16	9.30	.47
14	228	76.32	8.77	14.04	.87
15	185	75.66	9.19	14.04	1.08

Embarrassment is an emotional state. As an emotional experience it is likely to be remembered. If voice breaks cause embarrassment, and if, in addition, the reaction of the listener is to ridicule the boy who experiences the break—as we are led to believe—then the boy would be likely to remember the voice breaks that he has experienced. If, however,

[9] Guilford, J. P., *Psychometric Methods* (New York, 1936), pp. 327-378.

the break caused no embarrassment, the boy would be more likely to forget having experienced many breaks. The validity of these data on voice breaks depends largely on the memory of the subject.

It may be safely concluded, however, that since fewer than twenty-five per cent of the boys recalled being embarrassed in any degree by the voice breaks they had experienced, and since of that number only a very small per cent reported very much embarrassment, the occurrence of voice breaks is probably not so potent a factor as has been supposed in determining the personality of the adolescent boy. Certainly, if, of the boys who remembered having experienced voice breaks, about half of them failed to recall being embarrassed by the episode, it may be concluded that it had little, if any, effect on their personalities.

Summary and Conclusion

In summary this study indicates:

1. The onset of greatest change of voice depends somewhat on chronological age. The percentage of boys in the process of voice change rises from 60 per cent in the eleven-year-old group to 88 per cent in the thirteen-year-old group. It drops to about 58 per cent in the fifteen-year-old group.

2. Some boys (1.29 per cent) have adult voices at age eleven, but the first great shift in the direction of adult voices occurs at age 14 when the percentage jumps from 3.72 with mature voices in the thirteen-year-old group to 20.17 per cent in the fourteen-year-old group.

3. The onset of greatest voice change depends somewhat on pubic development. Almost 23 per cent of all the prepubescent boys observed still had childish voices, while slightly less than 2 per cent of them had changed voices. But 75.5 per cent of the pre-pubescent boys used in this study were in the period of voice change.

4. At the pubescent level, 89 per cent of the boys were in the process of voice change, while slightly more than 5 per cent still had childish voices and an equal per cent had mature voices.

5. Age and pubic development were about equally reliable as indices of the stage of voice development, the respective correlations being .65 and .68.

6. During the period of observation, a surprisingly small number of voice breaks were noted. Only four breaks occurred in a total reading time of more than 84 hours for the 1,014 boys in this study.

7. According to the reports of the boys themselves concerning the voice breaks they remembered having experienced, breaks may occur at any of the age levels investigated in this study. There is a gradual increase in the boys reporting voice breaks, consisting of from slightly more than 12 per cent in the eleven-year-old group to slightly less than 51 per cent in the fifteen-year-old group.

8. Memories of one or more breaks were reported by 5.52 per cent of the boys whose voices had not yet begun to change, by slightly less than 34 per cent of the boys whose voices were in the process of changing, and by almost 49 per cent of the boys whose voices had completed the change. The group of boys who reported the greatest percentage of frequent breaks (4.2 per cent) was the group whose voices had changed.

9. Of the pre-pubescent boys, 21.19 per cent reported that they recalled having experienced breaks, 37.32 per cent of the pubescent boys reported memories

of breaks, and 51.47 per cent of the post-pubescent boys remembered having experienced voice breaks. A greater percentage of the post-pubescent boys reported frequent breaks (3.58 per cent) than either of the other two groups.

10. Undue embarrassment is not a frequent concomitant of voice breaks. Of 674 boys who reported having experienced breaks, 317 boys (47 per cent) testified that they remembered some feelings of embarrassment caused by voice breaks. Of the 317 reporting feelings of embarrassment, 91 said, "Yes, but not much;" 90 said, "Yes, I was a little embarrassed;" but only 6 boys reported extreme embarrassment.

MUSCLE SPASTICITY IN FUNCTIONAL APHONIA AND DYSPHONIA

HERTHA TARRASCH, M. D.
Norristown State Hospital, Norristown, Pa.

Introduction

FUNCTIONAL aphonia and dysphonia is a subject still under discussion not only for the speech therapist but also for the medical profession. I have elsewhere[1] outlined and described the condition, its diagnosis and treatment. It is defined as a symptom complex of the laryngeal and surrounding structures with the outstanding symptom of hoarseness. In order to treat this disturbance the patient must be taught: 1. the mechanism of respiration; 2. relaxation of the lower jaw and tongue; 3. massage of the vocal cords by supraglottic and infraglottic pressure with an air column;[2] 4. placement of voice; and 5. cultivation of all resonating chambers, with emphasis on the thoracic. In the article mentioned I stressed the significance of one condition that we find generally prevalent to a greater or lesser degree in all cases of functional aphonia, viz., spasticity of the muscles of the neck. In phonation these patients employ the muscles of the neck and the extrinsic muscles of the larynx as parts of the phonatory apparatus (as proven in various tests), and these muscles gradually become very spastic and in some patients stand out like thick cords. The tendino-membranous part of the vocal bands lose their elasticity and normal tension; they relax, their edges no longer approximate evenly, and the clinical picture of aphonia is produced. Studies under the planograph helped me to prove this, and I refer also to studies on the same subject by West of Wisconsin[3] who reached the same conclusion by different means. Of the factors producing functional aphonia the spasticity of the neck structures seemed to me to be of greatest importance, and I tried to find means to prove this scientifically. Increased muscle activity means increase in action currents, e.g. in nerve impulses, and these impulses can be measured. Trials with the electrocardiagraph and a cathode ray electromyograph were not satisfactory. Finally the electroencephalograph with which we measure the action currents of the brain tissue proved to be very satisfactory. All tracings were taken in the Clinical Laboratory of the Pennsylvania Mental Institute in Philadelphia under supervision of Lieutenant Commander Joseph Hughes, M.D., head of the Laboratory.

Procedure and Subjects

Application of the electrodes

The electrodes were applied as follows: one over the insertion of the right sternocleidomastoid muscle, one over the hyothyroid group of muscles on the right side of the neck, one over the corresponding area on the left, and the fourth over the insertion of the left sternocleidomastoideus. In this way all action currents of the underlying muscle tissue could be recorded. This applica-

[1] Tarrasch, Hertha, "Clinical Aspects of Functional Hoarseness," *Archives of Otolaryngology*, XXXVI (1942), 53-70.

[2] See *ibid.*, pp. 65-69 for explanation.

[3] West, Robert, "Roentgenographic Study on the Positions of the Cartilages of the Larynx in Hysterical Aphonia," unpublished, 1930.

tion was called the neck application in order to distinguish it from the chin application used in the last three tracings where the electrodes were placed underneath the chin to record the action currents of the muscles of the tongue and the floor of the mouth.

Tracings

Three lines belong to each recording, the uppermost line always indicating the action currents of the left side, the middle line giving the resultant of the impulses of the central musculature (hyo-thyroid group), and the third line the impulses of the right side of the neck.

The large and regular recurrent waves in each tracing indicate the carotid pulse; the other waves represent muscle tonus and show normal nerve impulses as compared with the tremendous increase in the various patients. In order to neutralize any outside influence which might interfere with the accuracy, the patients were electrostatically insulated. Each figure shows one control and two cases of different degrees of aphonia. Trained and untrained voices were used as controls. The tracings give the sex, occupation, age, nationality of each case, the type of application of the electrodes, and the purpose for which the tracing was taken.

The tracing in Figure 1 was taken to record quiet breathing. The first, (a), is

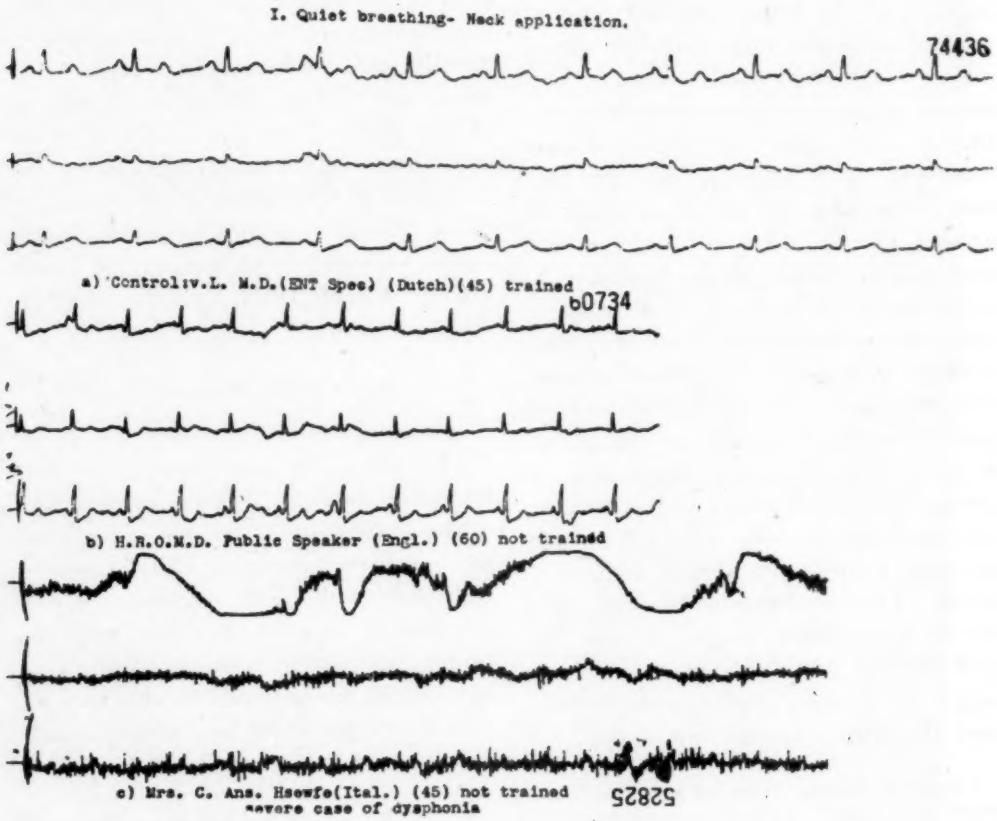
I. Quiet breathing- Neck application.
74436
a) Control:v.L. M.D.(ENT Spec) (Dutch)(45) trained
b0734
b) H.R.O.M.D. Public Speaker (Engl.) (60) not trained
c) Mrs. C. Ans. Hsewfe(Ital.) (45) not trained severe case of dysphonia
52825

FIGURE 1

II. Whispered voice- Neck application.
74438
a) Control: v.L. M.D. (ENT Spec.)(Dutch)(45) trained
b) H.H.O.M.D. Public Speaker (Engl.)(60) not trained
c) Mrs. C. Ans. Housfe.(Ital.)(45) not trained
severe case of dysphonia

FIGURE 2

control—a woman physician, ear, nose, and throat specialist, with a trained voice, showing normal muscle tonus.

The second, (b), is the tracing of a surgeon who is one of the most outstanding public speakers in the East, with an untrained voice. As so often seen in men, his breathing is correct without special training; moreover, his tracings do not show an increase in spasticity of the musculature of the neck as revealed by the record of his nerve impulses.

Compared to this we see the tremendous increase in action currents in the third, (c), which is the picture of a housewife, Italian descent, highly emotional. The large curved waves of the upper line are the resultants of muscle movements. The carotid pulse waves are obscured by the enormous number of small nerve impulses caused by the spasticity of the musculature of the neck observable in her case even in quiet breathing. This patient exhibits a severe case of functional aphonia, and as de-

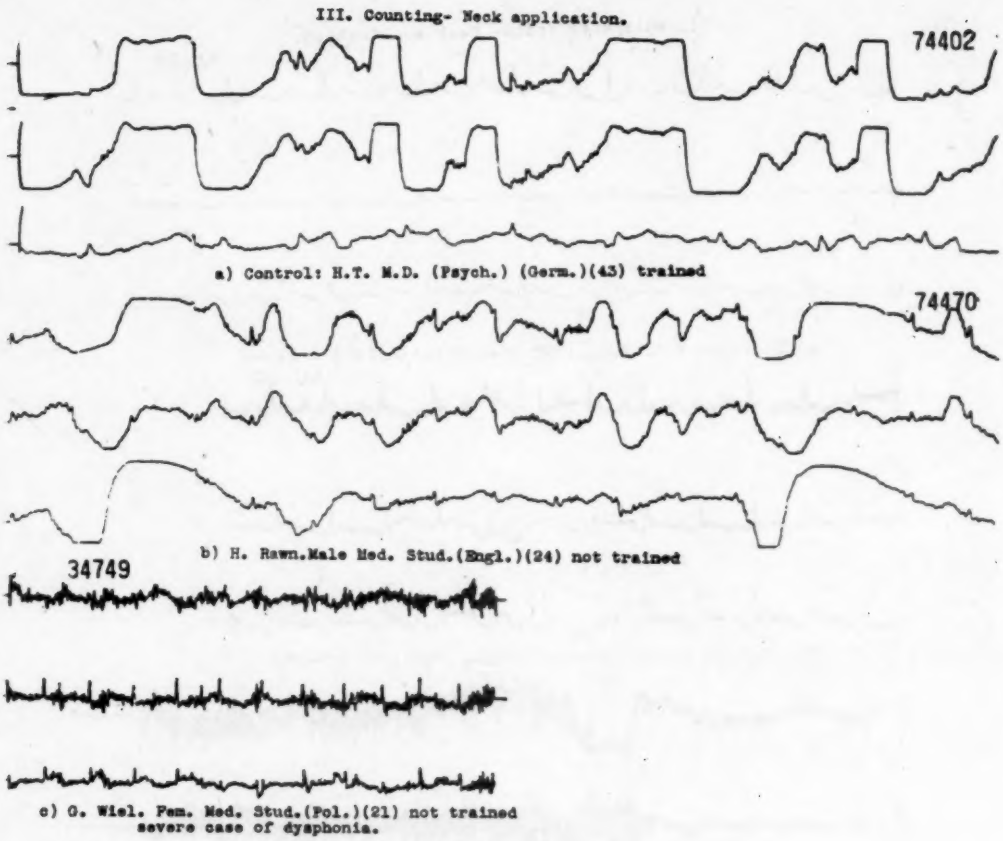
III. Counting- Neck application.
74402
a) Control: H.T. M.D. (Psych.) (Germ.)(43) trained
74470
b) H. Rawn.Male Med. Stud.(Engl.)(24) not trained
34749
c) G. Wiel. Fem. Med. Stud.(Pol.)(21) not trained
severe case of dysphonia.

FIGURE 3

scribed in the introduction, her sternocleidomastoid muscles on both sides can be felt as thick cords.

The same control and patients were used for the tracing (Figure 2) with whispered voice. The vowel *e* (ē) was used for this purpose. Patient (b), the second tracing, shows a marked increase in action currents compared with his normal picture on the first figure.[4] With phonation spasticity starts, and the second patient also shows an increase of spasticity, even more marked than the first. Here again the pulse waves are obscured by the tremendous number of action currents; the dark thick line consists of hundreds of fine peaks.

The control used in Figure 3 was a different woman physician, likewise with a trained voice; the large waves are movements of the jaw and respiratory muscles. It is interesting to notice a slight increase in action currents at certain points. The tracing was taken while the person counted from one to ten. In order to form certain consonants we have to use some of the pharyngeal and tongue muscles, which gives this slight increase in impulses. We might call it a deficiency in our languages. The second tracing here, (b), taken from a male

[4] This patient exhibited excess tension in phonation and even in whispered speech, though none in quiet breathing—a phenomenon more frequently observed in men than in women.

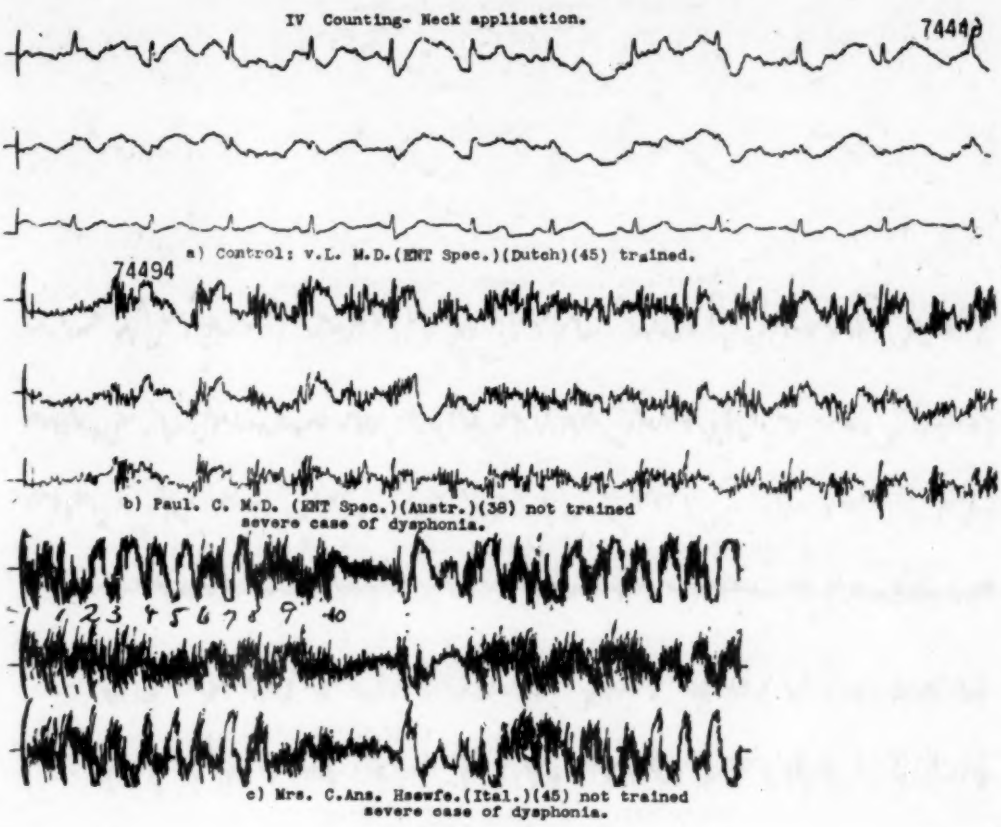
IV Counting- Neck application.
7444?
a) Control: v.L. M.D.(ENT Spec.)(Dutch)(45) trained.
74494
b) Paul. C. M.D. (ENT Spec.)(Austr.)(38) not trained
severe case of dysphonia.
1 2 3 4 5 6 7 8 9 10
c) Mrs. C.Ans. Hsewfe.(Ital.)(45) not trained
severe case of dysphonia.

FIGURE 4

medical student with untrained voice, is almost normal with very little spasticity; while the last tracing, (c), taken from a female medical student of Polish descent, shows a marked spasticity. The descent of the patient is interesting since minority problems and inferiority complexes enter the psychiatric picture (to be mentioned later) producing or increasing a tendency toward spasticity.

The tracings in Figure 4 were taken for the purpose of recording counting, but with a different set of patients and control. Tracing (b) was taken from another woman physician, an ear, nose, and throat specialist, who exhibits a very severe case of aphonia and is highly emotional and repressed; while the third tracing was taken from the same patient as used in Figures 1 and 2.

In Figures 5 and 6 the control and the patients were reading the same paragraph. Here again we see in the control at certain points a slight increase in action currents due to consonants like k, g, etc.

The subject of the second tracing (b) shows again considerable hypertension not only compared to the control but also to his previous tracing taken with whispering. Compare the control and the patient's tracing as to jaw movements: the large curves in the control indicate the movements of the jaw; there is very much less jaw activity in tracing (b) and more so in tracing (c).

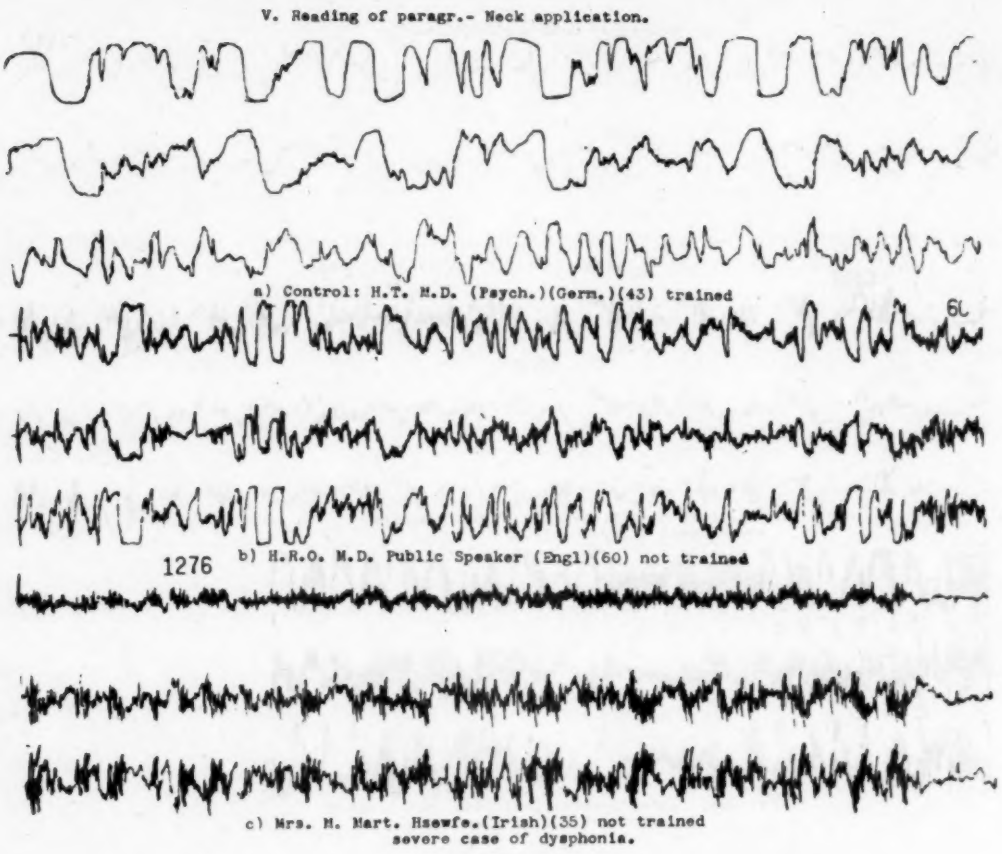
V. Reading of paragr.- Neck application.
a) Control: H.T. M.D. (Psych.)(Germ.)(43) trained
1276
b) H.R.O. M.D. Public Speaker (Engl)(60) not trained
c) Mrs. M. Mart. Hswfe.(Irish)(35) not trained
severe case of dysphonia.

FIGURE 5

The third tracing, (c), was taken from another housewife of Irish descent, highly emotional and repressed with very tense and hard neck structures.

In Figure 6, which again records the reading of a paragraph, an untrained male medical student was used as control showing some increase of nerve impulses that was slight as compared with the tracings of the two patients. The second tracing, (b), was taken from a male high school teacher who suffered for years of dysphonia aggravated by emotional components of inferiority and minority complexes. He likewise is of Polish descent. His tracing shows more definitely than some of the others a difference in spasticity of the two sides. The muscles of the right side, which is represented by the third line, are much less spastic than the left side. If the reader will look carefully over the other tracings he will find this same phenomenon in several of the other tracings. It suggests that we may use the musculature of the two sides unequally and develop different levels of spasticity on the right and left.

Figure 7, together with the remaining figures, shows tracings taken with chin application by means of which the action currents of the floor of the mouth and the tongue were recorded. The large curves are the movements of the jaw and, as noticed before, at certain

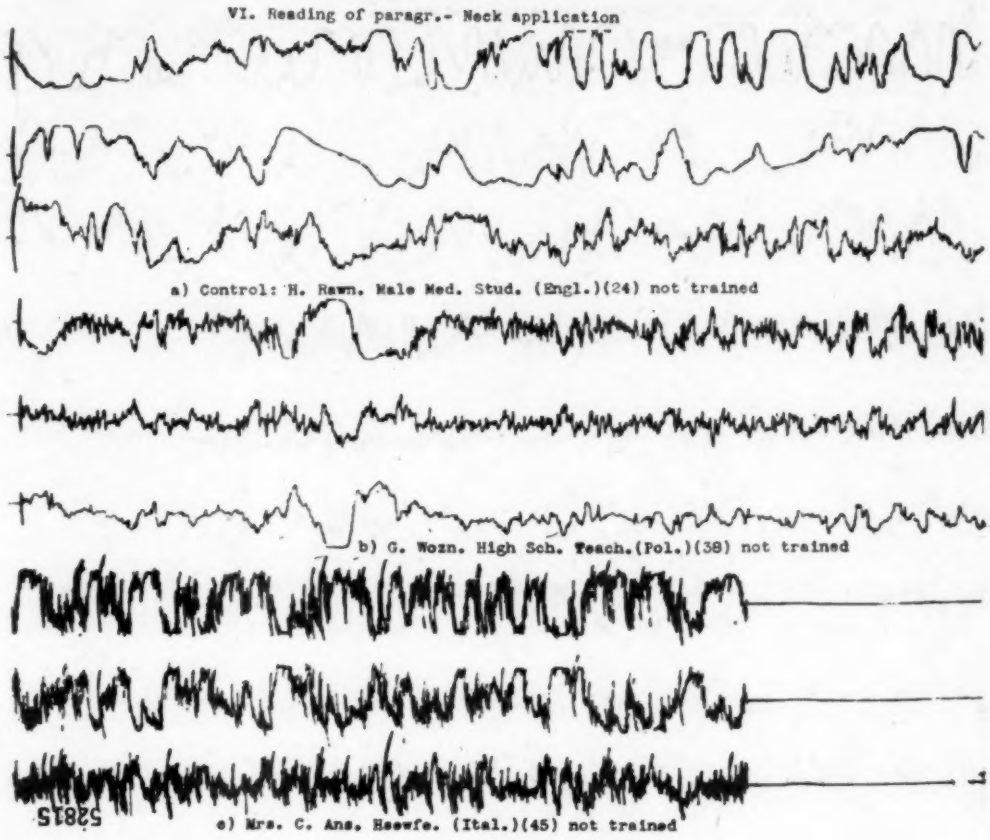
VI. Reading of paragr.- Neck application
a) Control: H. Rawn. Male Med. Stud. (Engl.)(24) not trained
b) G. Wozn. High Sch. Teach.(Pol.)(38) not trained
c) Mrs. C. Ans. Housfe. (Ital.)(45) not trained

FIGURE 6

points there is an increase in impulses due to certain consonants.

The patients in Figure 8 are both New Englanders, one a male medical student of Scotch descent, the other one a housewife of Polish descent, both very tense and repressed, highly emotional.

The patients in Figure 9 are public speakers, both naval officers, one of English, the other of German descent. One is a surgeon by profession, the other one a business man. While taking the tracings in whispered and spoken voice it was interesting to notice that both patients did very well when producing the long *e*. This success can perhaps be traced to their previous officer's training when they had to convey commands to their subordinates in a loud voice. This observation is not illustrated by the short section of the tracings here. Without conscious training most officers develop a certain "nasal twang" in order to spare their voices and to avoid hoarseness. In phonating sentences they both show definite symptoms and signs of functional aphonia proven here by the recording of the increase in action currents.

Summary

It is the purpose of this paper to prove with the electroencephalographic tracings the tremendous increase in nerve impulses of the muscles of the neck and tongue which we find in functional aphonia and dysphonia. Proper phona-

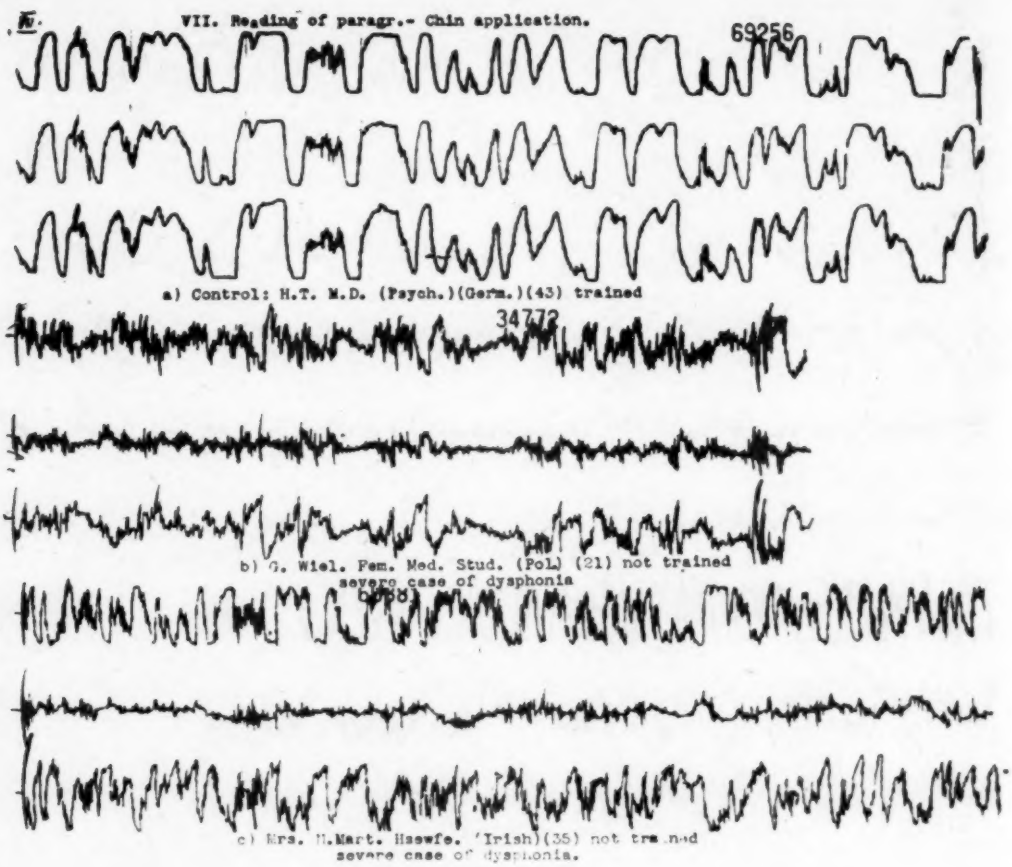
VII. Reading of paragr.- Chin application.
69256
a) Control: H.T. M.D. (Psych.)(Germ.)(43) trained
34772
b) G. Wiel. Fem. Med. Stud. (Pol.) (21) not trained
severe case of dysphonia
c) Mrs. M.Mart. Housefe. (Irish)(35) not trained
severe case of dysphonia.

FIGURE 7

tion is of great importance for our physical well-being and these tracings show clearly what a tremendous loss of energy we can actually measure in these hypertonic muscles. Each one of the waves represents an expenditure of energy and it is no wonder that these patients complain of and suffer from fatigue, listlessness, exhaustion, etc., after several hours of talking and lecturing. Valuable energy is wasted here and adversely affects the individual's well-being. But, besides the physical factor which can be measured in loss of energy, I should like, as a psychiatrist, to mention another important point. In dealing with these aphonias and dysphonias we have not only to consider the mechanical, physical side, but also a very strong emotional component. Speech is so important for each human being as the expression of thoughts, feelings, moods, joys, anger, fear, etc., that anything affecting the vocal apparatus must necessarily reflect upon the mental status and balance. There are workers in the field of speech correction who are of the opinion that the psychological factor in connection with aphonia is an entity in itself. We never can separate physical and mental factors in any condition. The modern

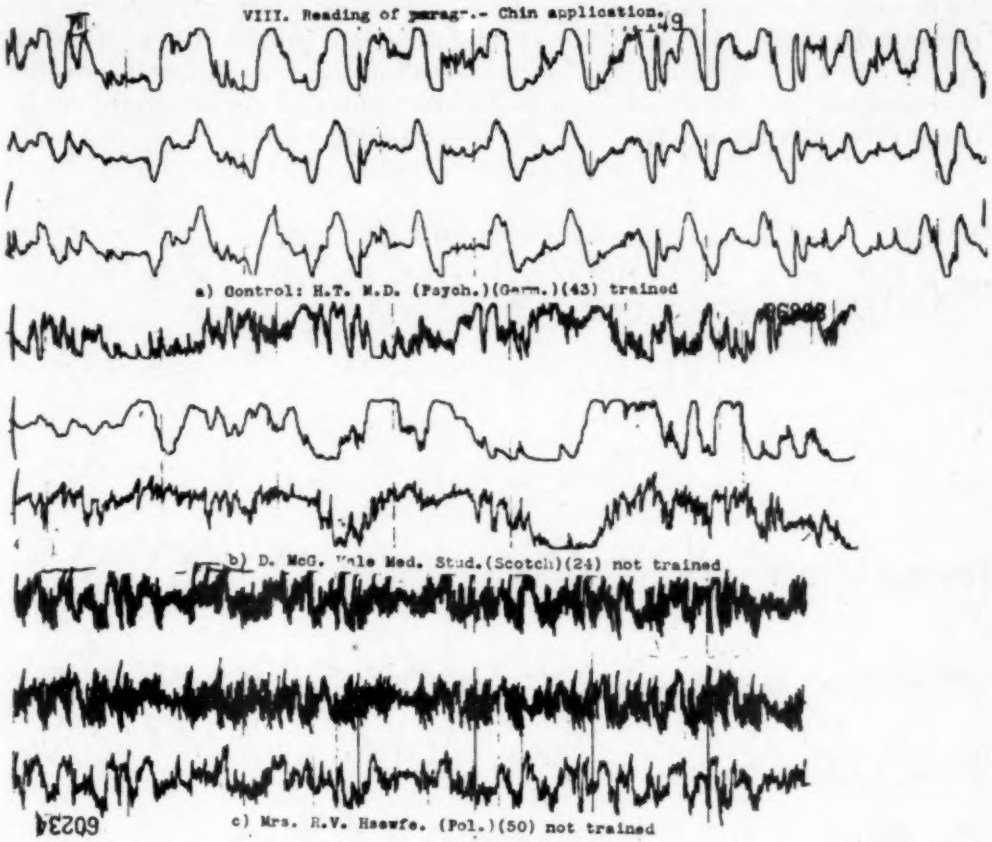
VIII. Reading of paragr.- Chin application.
a) Control: H.T. M.D. (Psych.)(Germ.)(43) trained
b) D. McG. Male Med. Stud.(Scotch)(24) not trained
c) Mrs. R.V. Hsewfe. (Pol.)(50) not trained

FIGURE 8

conception of medicine (and we should include phoniatry) culminates in psychosomatics, which emphasizes the close interrelation between the physical and mental factors. In psychosomatic medicine, the question is not as to whether the disorder is mental or physical, but rather, which condition antedated the other. Was it the physiogenic handicap,—in our case the actual improper phonation, improper use of the phonatory mechanism,—or was it the emotional factor which came first? The physical factor doubtless will lead sooner or later to an emotional conflict with depressive moods, inferiority ideas, withdrawal symptoms, etc. On the other hand, the emotional factor might be first. For instance, if we take an introvert,—a very shy, reserved individual,—forced by occupation or profession into public speaking, lecturing; such an individual very easily develops on top of the emotional conflict, spasticity and tension so that the improper phonation will follow the underlying personality coloring and aphonia will be produced secondarily. It is therefore of utmost importance in treating such patients always to keep both factors in mind.

By treating a case of functional aphonia the secondary emotional factor will disappear with the clearing up of the physical handicap; but where primary emotional difficulties are involved, the improvement of functional aphonia will dissolve only partially the pathological condition: there is a deeper personality conflict which cannot be cleared up by voice training alone.

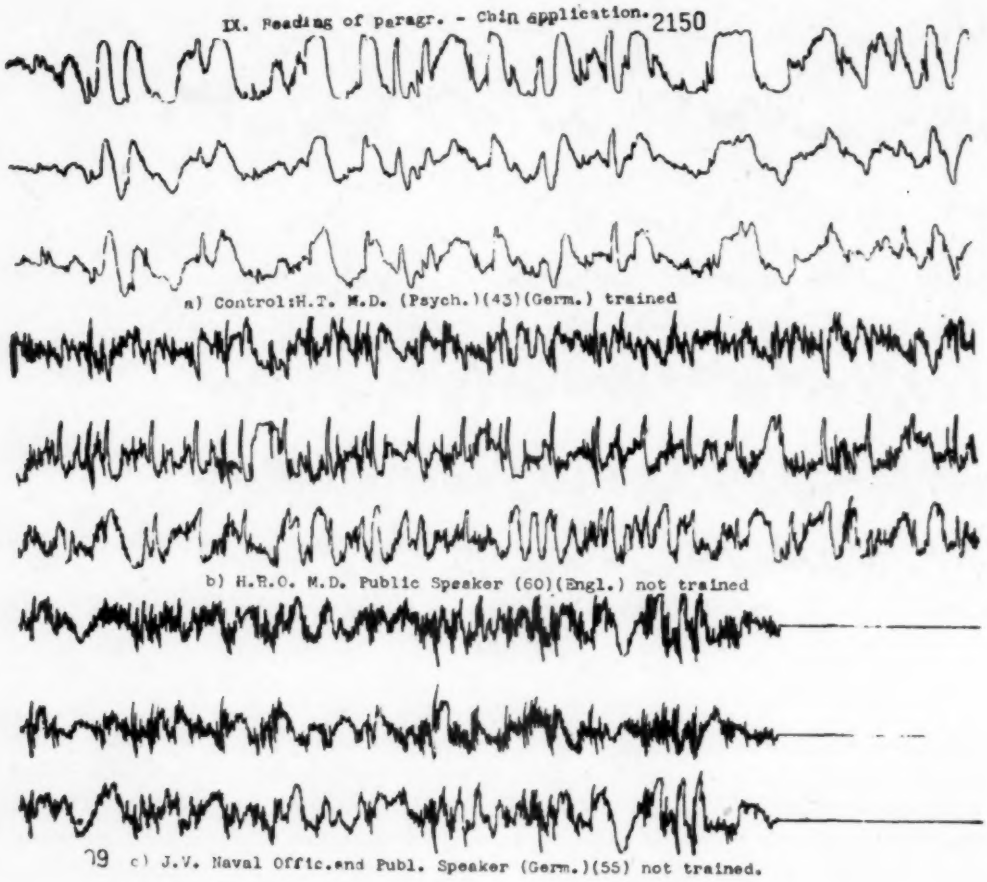
IX. Reading of paragr. - Chin application. 2150
a) Control:H.T. M.D. (Psych.)(43)(Germ.) trained
b) H.R.C. M.D. Public Speaker (60)(Engl.) not trained
09 c) J.V. Naval Offic.and Publ. Speaker (Germ.)(55) not trained.

FIGURE 9

AN EXPERIMENTAL STUDY OF SOME OF THE RELATIONSHIPS BETWEEN VOICE AND PERSONALITY AMONG STUDENTS OF SPEECH*

MELBA HURD DUNCAN
Brooklyn College

SAPIR has said that speech is intuitively interpreted by normal human beings as an index of personal expression. Where the layman may use voice quite unconsciously in making his personality evaluations, or on the other hand deliberately and overconfidently, the scientist is wary of attractive generalizations and is interested in exploration of the existence of actual relationships.

Background of the Problem

1.—*Research on Voice and Personality*

Beginning with Pear's research in England which was published in 1931, two types of studies on voice and personality have been carried on by investigators. First are those in which relationships have been sought between impressions of the unanalyzed voice as a whole and some aspect of the personality. Research by Pear,[1] Allport and Cantril,[2] Wolff,[3] Taylor,[4] Bonaventura,[5] Fay and Middleton,[6] Eisenberg and Zalowitz,[7] and Flemming[8] was concerned with listeners' reactions to voice *in toto*. With the exception of Flemming's investigation the studies involved matching procedure, that is, efforts to match the voices of unseen speakers with various aspects of personality presented in lists or descriptions. These characteristics ranged from purely physical or "outer" traits to complex "inner" characteristics. Flemming's research was concerned not with matching, but with the correlation between evaluations of students' voices and evaluations of various personality traits.

The second classification of investigations embraces those in which relationship has been explored between specific

*This article is a condensation of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the University of Minnesota, under the direction of Dr. Howard Gilkinson. The dissertation gives the following material which is largely omitted here: discussion of problems and methods of testing and rating, many statistical tables, data on students' rating of personality of speakers, data on use of the Bernreuter Personality Inventory in this research, sample copies of rating scales used in this study, bibliography.

[1] Pear, T. H., *Voice and Personality* (New York, 1931).

[2] Allport, F. W., and Cantril, H., "Judging the Personality from Voice," *J. Soc. Psychol.*, V (1934), 37-55, and *The Psychology of Radio* (New York, 1935), Chap. VI, "Voice and Personality."

[3] Wolff, W., "Über Factorem Charakterologischen Urteilsbildung," *Zsch. f. Angew. Psychol.*, XXXV (1930), 385-446.

[4] Taylor, H. C., "Social Agreement on Personality Traits as Judged from Speech," *J. Soc. Psychol.*, V (1934), 244-48.

[5] Bonaventura, M., "Ausdruck der Persönlichkeit in der Sprechstimme und in Photogram," *Archiv für die Gesammte Psychologie*, LXXXXIV (1935), 501-70.

[6] Fay, P. J., and Middleton, W. C., "Judgment of Occupation from the Voice as Transmitted over a Public Address System and over a Radio," *J. Appl. Psychol.*, XXII (1938), 620-31; "Judgment of Kretschmerian Body Types from Voice as Transmitted over a Public Address System," *J. Soc. Psychol.*, XII, (1940), 151-62; "The Ability to Judge the Rested or Tired Condition of a Speaker from His Voice as Transmitted over a Public Address System," *J. Appl. Psychol.*, XXIV (1940), 645-50; "The Ability to Judge Sociability from Voice as Transmitted over a Public Address System," *J. Soc. Psychol.*, XIII (1941), 303-09; "Judgment of Introversion from the Transcribed Voice," QJS, XXVIII (1940), 226-28.

[7] Eisenberg, P., and Zalowitz, E., "Judging Expressive Movement: III Judgments of Dominance-Feeling from Phonograph Records of Voice," *J. Appl. Psychol.*, XXII (1938), 620-31.

[8] Flemming, E. G., "Pleasant Voice," QJS, XX (1934), 194-99.

vocal characteristics and personality traits. Pitch, intensity, clearness, general voice quality, and selected unpleasant qualities are among the vocal attributes isolated for correlation with such "inner" characteristics of personality as masculinity of interests, confidence, sociability, neuroticism, social and emotional adjustment, and dominance. It may be of particular interest that among investigations of this type are several reported by the United States Committee on National Morale in a study of German psychological warfare.[9] Apparently expression analysis has been used in the routine selection of personnel by the Nazi military machine. In this country research includes studies reported by Michael and Crawford,[10] Gilkinson,[11] Stagner,[12] Eckert and Keyes,[13] and Moore.[14]

Table I is an effort to summarize the relationships reported in the second class of investigations, that is between *specific* vocal characteristics and aspects of personality as measured by various types of inventories.[15]

The picture resulting from the two types of research is undefined, particularly so far as descriptive terminology commonly employed in speech is concerned. The general conclusions which can be drawn in summary are:

1. More than chance success was found in the matching of voices of unseen speakers with some personality characteristics. Age, body-types, occupation, have been judged with some success from voice. The evidence on judgment of height from voice is conflicting. Tired condition could not be judged accurately so far as the meagre data reported show.

TABLE I

SUMMARY OF CORRELATIONS BETWEEN SPECIFIC VOCAL CHARACTERISTICS AND PERSONALITY SCORES

Four Investigations

Vocal Attribute		Area on Personality Inventory	Correlation	Experimenter
Quality (Pitch and Timbre)	vs.	Neuroticism B1-N	.04±.06	Eckert & Keyes
Quality (Pitch and Timbre)	vs.	Confidence F1-C	.06±.06	Eckert & Keyes
Quality (Pitch and Timbre)	vs.	Unsociability F1-S	.22±.06	Eckert & Keyes
Quality (Pitch and Timbre)	vs.	Social Maladjustment (Bell 3)	.11±.05	Eckert & Keyes
Quality (Pitch and Timbre)	vs.	Emotional Maladjustment (Bell 4)	.03±.06	Eckert & Keyes
Degree of *Unpleasantness* of quality among Breathy plus Whiny group (61)	vs.	Neuroticism B1-N	.78	Moore
Degree of *Freedom from unpleasantness of quality* among Breathy plus Whiny group (61)	vs.	Dominance B4-D	.44	Moore
Voice Intensity (10 speakers)	vs.	Confidence F1-C	.80	Stagner
Pitch (spotted from records)	vs.	Masculinity (Stanford Attitude-Interest Test B)	.34±.06	Gilkinson

[9] *German Psychological Warfare, Survey and Bibliography*, edited by Ladislas Farago, Part II, "Psychology of Total War," 3—"Selection and Testing of Personnel," (New York, 1941).

[10] Michael, W., and Crawford, C., "Judging Intelligence from Voice," *J. Educ. Psychol.*, XVIII (1927), 107-14.

[11] Gilkinson, H., "Masculine Temperament and Secondary Sex Characteristics; A Study of the Relationship between Psychological and Physical Measures of Masculinity," *Genet. Psychol. Mono.*, XIX (1937), 105-54.

[12] Stagner, R., "Judgments of Voice and Personality," *J. Educ. Psychol.*, XXVII (1935), 272-77.

[13] Eckert, R. G., and Keyes, N., "Public Speaking as a Cue to Personality Adjustment," *J. Appl. Psychol.*, XXIV (1940), 44-53.

[14] Moore, W. E., "Personality Traits and Voice Quality Deficiencies," *J. Speech Disorders*, March 1939, 33-36.

[15] The study by Michael and Crawford on intelligence and voice is not included because of insufficient data.

2. There is some evidence that there was more success in guessing "inner" traits from voice than physical characteristics, although correlations covered a wide range.
3. That we have voice stereotypes has been demonstrated by several independent pieces of research. Social agreement on matching exceeds accuracy of matching voice and personality.
4. Some relationship was found between pleasant voice and desirable social characteristics such as adaptability and tact.
5. Some relationship was found between pitch of voice and masculinity of interests among men.
6. Quality defined as pitch and timbre was found by Eckert and Keyes to have no significant relationship with Emotional and Social maladjustment, Confidence, Neuroticism. The highest correlation was between quality (pleasing) and unsociability, although that too just missed statistical significance.
7. The most fruitful investigation in terms of discovered relationships between specific vocal deficiencies and personality has been Moore's, who found that breathy and whiny voiced speakers showed different personality characteristics, as measured by Bernreuter, from metallic and harsh voiced speakers.

All correlations need to be verified before we have any reason for believing that there is relationship between voice and personality of predictive value.

II.—*Research on General Skill in Speech and Personality*

Another line of evidence raises questions on relationships between personality adjustments and vocal patterns. A number of investigators have studied the personality traits of effective speakers and have discovered, in general, that unsatisfactory social adjustment, submissiveness, dependence, emotionality, exist among poor speakers to a greater extent than among good speakers.[16] We can ask if the difference in social adjustment between good and poor speakers which Gilkinson and Knower found, for example,[17] will hold when one aspect only of good speaking, i.e., voice, is isolated for rating. If it does hold, are there any specific kinds of vocal unpleasantness which accompany poor social adjustment?

III.—*Clinical Observations and Theoretical Considerations on Voice and Personality*

Clinical studies present further contributions to the picture of the relationships between voice and personality, although the danger of what Allport has called "monosymptomatic diagnosis" is recognized in making or accepting conclusions based on clinical diagnosis. Like facial expression, vocal cues are not entirely personal. Constitutional build is a determinant apart from "the life within," as is convention, and conditioning by habits of speech in the environment. Furthermore the various aspects of expression have different significance for different individuals. Another fact about voice should be noted, in which it resembles other habits of behavior: if the vocal pattern seems dominated by undesirable social or emotional adjustment it is not necessarily the present attitude which is reflected in the voice. Because muscular habits become well-entrenched over a period of years it is entirely possible that the tension pattern causing unsatisfactory speech may persist long after the attitudinal cause (assuming such a factor was present) has disappeared.

There can be little doubt, however, that extreme changes in personality,

[16] Dow has summarized a number of these studies in a table, "The Personality Traits of Effective Public Speakers," QJS, XXVII (1941), 525-32. The studies which have been referred to most frequently in the literature are by Murray, Tracy, Hunter, Waggener, Rose, Gilkinson and Knower.

[17] Gilkinson, H., and Knower, F., "A Study of Standardized Personality Tests and Skill in Speech," *Jr. Educ. Psychol.*, XXXII (1941), 161-75.

whether neurological or psychogenic, have attendant vocal manifestations. Clinical observation shows that personality problems involving conflicts and repressions often cause functional vocal manifestations as acute as those resulting from organic pathology. Wyatt's report of cases[18] where personality conflicts have caused voice disorders is one of the interesting discussions of this phenomenon in the literature. She reviews a number of cases in which extreme vocal unpleasantness was relieved quickly by use of psychoanalysis, and presents Deutsch's theory that inner conflict may be acted out on the body. The meaning of the symptom varies with different patients, but the type of neurosis in the environment may influence the direction in which the neurotic pattern is laid down. Wyatt believes that in pre-language vocalization there is a relation between a child's soft intonation (relaxation) and his pleasurable feeling, and between spastic intonation (tension) and anxiety or aggression.

In this connection it is well to review a statement by Holmes which Weaver has called one of the most penetrating observations that has been made about the speaking voice in years.[19] Holmes reminds us that the closing of the valve, the vocal folds in the larynx, is an automatic function. Without it a child would not be able to make sounds at birth. As soon as he begins to struggle he produces vocal sounds, since a primitive function of the larynx is to act as a valve for imprisoning air in the lungs.

> Since the first vocal sound the baby makes is the product of struggle, and since we must use for voice production the same mechanism developed for use during a physical struggle, *failure to inhibit struggle behavior when using the valve in the larynx for voice production is the most serious obstacle in the way of efficient phonation.* (Italics Holmes').

Weaver goes on to point out that emotion, which accentuates struggle behavior, throws the valve mechanism back into the closure activity, its primitive function. Wyatt, concerned with the result, expresses the belief that voice, if not inhibited, remains an irrational or basic emotional element in our speech.

Moses[20] believes the pattern of relationship between adjustment and voice is so dependable that categorical assertions about it can be made—that the schizoid type of personality and the cycloid type each has its special voice, for example. Apparently his conclusions are based on clinical study, and show admirable insight, but we can question whether speech teachers are justified in applying the statements as laws before quantitative evidence has been assembled to verify individual clinical observations.

The Problem

The three directions of effort reviewed above formed the background of the present research, namely: experimental investigations on the relationship of voice and personality, conclusions on general skill in speech and personality scores, and clinical observations on the relationship between personality problems and voice deficiencies.

The trend in the research on voice and personality has been away from the matching of voice and impressions of personality with which it started and toward the statistical measurement of relationships between ratings of voice

[18] Wyatt, Gertrude L., "Voice Disorders and Personality Conflicts," *Mental Hygiene,* XXV (1941), 237-50.

[19] Weaver, A. T., *Speech Forms and Principles,* (New York 1942), p. 193, quotation from Holmes, F. L. D., *A Handbook of Voice and Diction,* (New York, 1940) p. 14.

[20] Moses, P. J., "Social Adjustment and the Voice," QJS, XXVII (1941), 532-37.

on one hand and ratings of personality on the other. Since the research from this approach as reported above has been productive of only tentative conclusions, further investigation seemed desirable on some of the questions which were involved. The research on general skill in speech versus personality ratings uncovered correlations which raised the question if any relationship would hold if voice were singled out from the total speech impression for analysis. A number of conclusions based on clinical observations were striking enough to put emphasis on the need for a statistical approach to the relationships between voice and personality which had been claimed.

The broad question growing out of the above considerations was selected as the focus of this investigation: Is there a relationship between presence of certain vocal characteristics as judged by auditors and personality characteristics as measured by personality inventories? This general inquiry was broken down into four specific questions:

1. Is there any relationship between laymen's impressions of voice when rated in the *context of the whole personality* and scores on personality inventories and personality rating scales?
2. If relationships do show up consistently between voice ratings and any of the areas of a personality inventory, does any relationship emerge when *specific* vocal characteristics are subjected to analysis? Of particular interest are unpleasant vocal characteristics as they may or may not be associated with personality mal-adjustive traits.
3. With *voice isolated from the total personality context* (speakers unseen), what is the relationship between *experts'* ratings on voice and personality inventory scores?
4. With analysis confined to a group whom experts have judged *inferior* in voice quality, do certain quality deficiencies distinguish some personality scores from others?

Questions 1 and 2 were probed in Part I of the design of the experiment, and Questions 3 and 4 in Part II.

Procedures

I.—*Experimental Procedure in Part I*

The data in Part I were gathered on students registered in courses in Fundamentals of Speech at the University of Minnesota in the winter quarter of the 1939-40 school year, and the following fall quarter of 1940-41. Within the first two weeks of the course students were given the Bell and the Bernreuter personality inventories.[21]

The third week in the quarter all students presented a three-minute narrative in their respective classes. Half the class members rated each speaker on a Voice Rating Chart which was a combination check list of adverse and favorable terms and a 1-to-9 point rating scale on each of the vocal attributes: Quality, Pitch, Force.[22]

The adverse terms were selected to describe specific characteristics of unpleasant vocalization. The aim was to make a reasonable differentiation among vocal characteristics, using terms generally current among speech teachers, and including items used by other experimenters yet non-technical enough to be meaningful to beginning students of speech with a minimum of explana-

[21] As the Fundamentals of Speech course was set up at the University of Minnesota at that time, the students understood from the beginning that they would be asked to take certain tests during the course which would enable the instructor to guide them more efficiently in their progress in the class. A relatively cooperative attitude was thus generally insured when the student filled out the required questionnaires. They were not taken just as a part of a battery of tests presented in a hectic pre-class period of registration and orientation to college life.

[22] Rate was included on the original rating sheets but was eliminated in treatment because of the generic nature of the term and the unreliability of ratings. In both parts of the design ratings were made on actual voices, not on records.

tion. Since there are no exact opposites of the unfavorable terms applied to quality which carry positive evaluation of pleasantness, terms on the positive side had to be less specific, and indicative of generally pleasing quality. Each one in itself had no particular identification value, and the number used served chiefly as a balance for the unfavorable terms, although it was hoped they might have some popular significance.[23]

The terms were explained briefly by the classroom teacher, and questions about the use of the sheet were answered preceding the rating. Half the class members rated each speaker on a Personality Rating Chart. Voice and personality raters were seated alternately. Discussion of results on the use of the latter chart are not presented in this digest since the data are not vital to the main pattern of the research.

Data were obtained on 336 students. On 101 of these students three instructors also rated the voice during the three-minute speech performance.

Pearsonian correlations were obtained between averaged ratings for each vocal attribute and scores on each of the four areas of the Bell Adjustment Inventory and four scales of the Bernreuter Personality Inventory. The sexes were handled separately.

Frequency tables were prepared on the application of adverse and favorable terms to students with scores in each of the four quartiles on the Emotional and Social Adjustment areas of the Bell Inventory, the areas where the highest correlations emerged between test scores and voice ratings. Chi square analysis[24] was made on the total frequencies of the combined sexes in the first versus the fourth quartile on each of the favorable and adverse terms. This was done to determine whether the numbers of students with low or unsatisfactory scores on social or emotional adjustment differed significantly from the number with satisfactory to excellent scores in the frequency of application to them of favorable and adverse terms describing voice.

II.—*Experimental Procedure in Part II*

The procedure in Part II differed from that in Part I in three respects: only expert judges made ratings of voices; the speakers were unseen by them; an intensified analysis was made of the voices rated low in quality.

The data in Part II were gathered on 348 Fundamentals of Speech students the fall of 1941-42. The second week of the quarter students took the Minnesota Personality scale by Darley and McNamara.

During the third week each student was rated on voice quality, pitch, and force, on a 1-to-9 point graphic rating scale by four instructors who were seated behind screens where they could not see the students who entered the room one at a time to read material uniform for all. Pearsonian correlations were computed between scores on the areas of the personality scale and the averaged ratings on each of the three vocal attributes.

The 69 students from among the 348 who were rated below 5 on voice quality by at least three of the four judges were called in for further observation the sixth week of the quarter. Again they

[23] The adverse terms on the rating sheets were: Quality: nasal twang, nasal whine, muffled, breathy, lifeless, metallic, thin, harsh; Pitch: too high, too low, narrow span, monotonous inflection; Force: too loud, too weak, monotonous; Favorable terms were: Quality: rich, pleasant, resonant, clear, soft, sweet, vibrant, beautiful; Pitch: pleasing, controlled, varied, lively; Force: suitable, controlled, varied.

[24] Garrett, Henry E., *Statistics in Psychology and Education* (New York, 1940) pp. 377-87.

read material uniform for all, and were rated by four expert judges.[25] For this special testing a new rating scale had been devised as an improvement on the check list of unfavorable terms on voice quality used in Part I. The use of terminology to describe voice quality deficiencies was discussed among the four expert judges preceding the re-testing. The terms finally selected to describe deficient quality were: Hypernasal, Harsh, Metallic, Constricted, Pectoral, Hoarse, Breathy, Muffled, A-resonant, Whiny, De-nasal. Each speaker was rated as to amount of presence of each of these unfavorable qualities on a o-to-5 point graphic rating scale on which "o" indicated that the undesirable trait was not present and "5" showed presence to an extreme degree.

These 69 who were deficient in quality, 44 women and 25 men, then took the Bell Personality Inventory. Tables were made giving scores on the Minnesota Scale and the Bell Inventory, and averages on degree of presence of each quality deficiency. Fisher's "t" statistic[26] was used as the test of significance of differences among the kinds of quality deficiencies on Social Adjustment scores on the Bell Inventory and the Minnesota scale, the area where the most significant correlations emerged. Each student was classed according to his predominant trait, i.e., the trait on which he received the highest average rating. This analysis distributed the subjects among the following types: hypernasal, constricted, hoarse, breathy, muffled, and a-resonant.

[25] The four were experienced college speech teachers, all of whom had done special work in the field of voice.

[26] Lindquist, E. F., *Statistical Analysis in Educational Research* (New York, 1940), p. 57.

Results and Interpretation

I.—*Part I*

Reliability—Corrected coefficients of reliability on students' ratings in Part I were not high, although the corrected coefficients were all well above the reliability coefficient of .55 which Symonds found to be typical for rating personality traits by ordinary judgments. For the men and the women respectively they were: .76 and .78 on Quality; .80 and .78 on Pitch; .79 and .82 on Force.

Relationships between Bell Inventory Scores and Voice Ratings—Table II presents Pearsonian correlations between the four areas of the Bell Personality Inventory and the averaged students' ratings on Quality, on Pitch, and on Force of voice. As the scattergrams were set up, minus correlation shows relationship between undesirable ratings on voice and undesirable scores on the Bell.

The correlations between the Bell *Social Adjustment* scores and voice ratings are all negative, and all at least four times the probable error. This is the only area on the Bell where the correlations are both consistent in direction and significant in size on Quality, Pitch, and Force for both men and women. These correlations between voice ratings and social adjustment scores indicate a slight but definite relationship between social adjustment as measured by the Bell Personality Inventory and classmates' impression of degree of pleasingness of voice quality, pitch, and force. The highest correlations are between Quality and Social Adjustment for the men, and between Force and Social Adjustment for the women.

Table III presents the correlations between instructors' ratings on 50 of these men and 51 of the women. The same relationship emerges here. Although

TABLE II

PEARSONIAN CORRELATIONS BETWEEN BELL INVENTORY SCORES AND STUDENTS' RATINGS ON VOCAL ATTRIBUTES

		Men—187		Women—149	
		r	P.E.	r	P.E.
Bell Social Adjustment					
vs.	Quality	—.34	.043	—.26	.051
	Pitch	—.22	.046	—.24	.051
	Force	—.21	.046	—.37	.047
Bell Emotional Adjustment					
vs.	Quality	+.30	.043	—.11	.054
	Pitch	+.16	.048	+.04	.055
	Force	+.12	.049	—.03	.055
Bell Home Adjustment					
vs.	Quality	—.02	.049	—.04	.055
	Pitch	—.004	.049	—.13	.054
	Force	+.04	.049	—.05	.055
Bell Health Adjustment					
vs.	Quality	—.03	.049	+.09	.055
	Pitch	+.06	.048	+.03	.055
	Force	—.01	.049	—.02	.055

TABLE III

PEARSONIAN CORRELATIONS BETWEEN BELL INVENTORY SCORES AND INSTRUCTORS' RATINGS ON STUDENTS' VOICES

		Men—50		Women—51	
		r	P.E.	r	P.E.
Bell Social Adjustment					
vs.	Quality	—.24	.089	—.24	.089
	Pitch	—.22	.090	—.18	.092
	Force	—.32	.085	—.35	.083
Bell Emotional Adjustment					
vs.	Quality	+.07	.095	+.03	.095
	Pitch	+.04	.095	—.05	.095
	Force	—.04	.095	+.05	.095
Bell Home Adjustment					
vs.	Quality	+.31	.086	—.08	.095
	Pitch	+.17	.092	+.04	.095
	Force	+.22	.090	—.01	.095
Bell Health Adjustment					
vs.	Quality	+.12	.094	+.09	.094
	Pitch	+.04	.095	—.03	.095
	Force	—.04	.095	—.02	.095

the coefficients just miss the requirement of being four times the probable error (except in the case of Force versus Social Adjustment), they are consistent in direction and are indicative of the same trend in relationship as the correlations on the basis of students' ratings.

Reference again to Table II shows that the consistency in signs was not present in correlations with any area of the Bell Inventory except Social Adjustment. For the men there emerged some tendency for unsatisfactory scores on the Bell Emotional and high ratings on voice to occur together. This would seem to indicate a slight tendency for emotional instability and impression of pleasing quality to accompany each

other for men. For the women, on the other hand, there is a slight but not statistically significant relationship in the reverse direction between Quality and the Bell Emotional and no relationship between Pitch and Force and Emotional Adjustment.

There was no significant relationship between impression of voice and the Home Adjustment or Health Adjustment areas on the Bell Inventory. Instructors' ratings on voice likewise show no relationship with the Bell scores except in Social Adjustment as already noted above, with the exception of that between Home Adjustment scores and Voice Quality for the men, which is significant if we use Fisher's test of significance for small samples.

Correlations between students' ratings on voice and scores on the four Bernreuter scales used in this research did not meet the usual tests of significance, although a consistent trend in relationships was noted in the expected direction. The Bernreuter was excluded from further use in this study.

Relationships between Bell Social and Emotional Adjustment Scores and Specific Voice Deficiencies—The percentage of student judges who responded to each term on the check list was determined for each subject. Although the favorable terms were included to balance the unfavorable, as has been explained, and had little specificity of meaning, some interesting use of them was made and they were therefore included in this analysis. Subjects were then classified in quartiles on the basis of their scores on the Social Adjustment area of the Bell Inventory and on the Emotional Adjustment area. Six tables were made of these data. (Not presented here.) On the tables was recorded the number of subjects in each quartile to whom certain proportions of the class had applied the descriptive terms on the rating sheets.[27]

The Chi square test was applied to the total number of students in the lowest and the highest quartiles on the Bell Social Adjustment and the Emotional Adjustment areas for o percentage of judgments and total percentage of judgments on each descriptive term. By judgments is meant the percentage of students who used the label. The hypothesis was that if the vocal trait, or more accurately the response to the descriptive term, made no distinction between students who were badly adjusted socially and those well adjusted, as measured by the Bell Inventory, we should have an equal number in the Q1 and Q4 groups. Chi square gives the significance of any deviation from expectancy in terms of P or the probability that the deviation is due to chance. With a P of .05 or less, which was taken as a conservative level of significance for these data, the following results were obtained:

1. As used by student judges, 11 of 30 descriptive terms, or about one-third of the total number, had value in separating students who had poor scores on social adjustment from those who had good scores. Six of these terms were *adverse* descriptions which had been selected for use on the check list because it was assumed they would have some specificity of application.
2. The following terms had "meaning" in the sense that their use differentiated the retiring from the aggressive men and/or women in this population when these terms were applied to speakers by student judges who made evaluations of voice in the presence of the speaker, i.e., with voice in the context of the total personality:

[27] The Percentage classifications used in tabulating the data were: o or no percentage of responses; 1 to 25 per cent (i.e. one to 25 per cent of the judges underlined the term as applying to a given person); 26 to 50 per cent; 51 to 75 per cent; 76 to 100 per cent responses.

Male Voices	*Combined Sexes*[28]
Breathy quality	Vibrant quality
Lifeless quality	Narrow pitch span
Rich quality	Controlled pitch
Resonant quality	Too Weak force
Monotonous inflection	
Monotonous force	
Varied force	

3. None of the descriptive terms made significant discrimination among Emotional Adjustment scores.

The fact that only about one-third of all the terms differed significantly from chance in frequency of application to retiring and aggressive students suggests a real selectivity in use. To put it another way, there seems to be a real difference between Q1 and Q4 students on Social Adjustment in the impression they give of certain vocal traits as those traits are symbolized by descriptive terms. The differentiations which were made were all in the expected direction for all significant terms.

Instructors' use of terms for 50 men and 51 women among the subjects added further evidence in that the students who were satisfactory to low on Social Adjustment (below the median) not only had *lower over-all ratings* on Quality, Pitch, and Force, but also had *more specific unpleasant types* of quality and force checked against them. Those who were satisfactory to high on Social Adjustment (above the median) not only had *higher over-all ratings* but had *more specific desirable characteristics* of quality, pitch, and force in their favor.

II.—*Part II*

Reliability — Pearsonian correlations were run on the averages of two faculty judges' ratings against two on Quality, on Pitch, and on Force for 215 women and 133 men in Fundamentals of Speech. Corrected coefficients of reliability for the men and the women respectively were: .76 and .69 on Quality; .67 and .81 on Pitch; .89 and .92 on Force.

Relationship between Instructors' Ratings on Voice and Scores on the Minnesota Personality Scale—Three of the five scales on which the Minnesota Personality Scale is scored resemble, in label at least, three of the areas of the Bell Inventory, namely Social Adjustment, Family Relations, and Emotionality. In addition to these three there is one on Morale and one on Economic Conservatism.[29]

Table IV presents Pearsonian correlations between instructors' ratings on voice and scores on the Minnesota Personality Scale. The correlations are consistent in direction on Social Adjustment, although they are not significant on Pitch and Force for the men. As the scattergrams were set up these correlations show the same direction of relationship that was found in Part I on the Bell Inventory. Correlations are not significant or are inconsistent in the Family Relations, Morale, and Emotionality areas. The correlations on Economic Conservatism and voice show a slight tendency for the students who are the less conservative in beliefs on industrial and economic problems to be more efficient vocally than their more conservative classmates as indicated by low but significant r on this area versus Force for the men and r's which just miss significance on this area versus Quality and Pitch for the women. Since liberal or radical beliefs are not likely to ac-

[28] Frequencies were combined for men and women to get numbers which justified Chi square analysis.

[29] Unlike the Bell, the Social Adjustment scale is set up so that high scores are favorable, that is are characteristic of the socialized or gregarious individual. High scores are also "desirable" on the Emotionality, Family Relations and morale scales. On Economic Conservatism high scores indicate conservative economic attitudes whereas low scores reveal a tendency toward liberal or radical points of view on industrial and economic problems.

TABLE IV

PEARSONIAN CORRELATIONS BETWEEN INSTRUCTORS' RATINGS ON VOICE* AND SCORES ON MINNESOTA PERSONALITY SCALE**

	Men—133***		Women—215	
	r	P.E.	r	P.E.
Scale I				
Morale				
vs. Quality	+.10	.060	—.01	.042
Pitch	+.09	.060	+.06	.048
Force	+.06	.060	+.02	.048
Scale II				
Social Adjustment				
vs. Quality	+.26	.052	+.31	.043
Pitch	+.12	.060	+.22	.045
Force	+.15	.054	+.19	.045
Scale III				
Family Relations				
vs. Quality	+.09	.061	+.19	.045
Pitch	—.02	.064	—.07	.048
Force	—.29	.052	+.03	.048
Scale IV				
Emotionality				
vs. Quality	—.01	.064	+.01	.048
Pitch	+.01	.064	+.025	.048
Force	+.08	.060	+.006	.048
Scale V				
Economic Conservatism				
vs. Quality	+.003	.064	—.177	.045
Pitch	—.10	.060	—.16	.045
Force	—.38	.050	+.12	.047

*Speakers unseen by raters
**Scores on this scale are compared with Bell's in footnote 29.
***Some deviations from these totals were due due to incomplete data on some areas of the scale.

company social submissiveness, this small association is not surprising in the light of what has already been observed of relationships between voice and personality.

Isolation of Specific Unpleasant Qualities Among the Vocally Deficient—In the intensification of analysis the 69 students who were judged deficient in Quality, about one-fifth of the Fundamentals of Speech students, were rated for amount of presence of each of 11 unpleasant qualities of voice. The question was: Do any significant differences in social adjustment,—which is the area on the inventories where most consistent relationships had appeared,—emerge among the eleven types of unpleasant quality isolated for observation? Table V presents the number of men and women classified under each predominant trait, *i.e.*, the one on which the student received the highest average of four expert judgments on deficiency. It will be observed that only six of the eleven terms are used as "predominant" for the women, and only five for the men.[30]

[30] One of them had no dominant deficiency. In discussing his case after the ratings had been completed the judges agreed that he should not have been among the students classified as deficient in voice quality and probably had been rated low in quality on the first testing because of some purely temporary voice problem. The fact that one such outsider was found in this group and noted, but only one, seems to give support to the confidence felt in the care with which the ratings were made in the testing of the whole Fundamentals of Speech population.

TABLE V

VOICE QUALITY CLASSIFICATION OF 68 MEN AND WOMEN WITH QUALITY DEFICIENCIES

Quality	Women—44	Men—24	Total—68
Hypernasal	16	7	23
Harsh	0	0	0
Metallic	0	0	0
Constricted	10	11	21
Pectoral	0	0	0
Hoarse	4	1	5
Breathy	5	1	6
Muffled	1	4	5
A-resonant	8	0	8
Whiny	0	0	0
De-nasal	0	0	0

Examination of the students among those with quality deficiencies who had been referred to the Speech Clinic suggested that the structural picture was relatively unimportant as cause of unpleasant quality.

Fisher's "t" statistic was used as the test of significance of differences among quality deficiencies on social adjustment scores.[31]

Tables were constructed which presented "t" for each vocal trait versus every other vocal trait on the Social Adjustment score on the Bell Inventory and on the Minnesota Scale. The results were largely negative. The number of cases of quality deficiency in several categories was too small to be manipulated statistically.

A few significant differences emerged on the Bell Inventory scores. The a-resonant female voices appeared to be associated with inferior social adjustment. When the mean on Social Adjustment for the 16 hyper-nasal women was compared with that for the eight a-resonant women a "t" of 1.903 was obtained, which just misses significance on the five per cent level. In other words, there is a fairly good chance that the a-resonant women actually differed from the hyper-nasal women in social adjustment. Whether or not we consider the difference significant depends on how conservative we are in our choice of level of significance. The a-resonant women were significantly inferior to the hoarse women on social adjustment ($t = 3.413$). The hoarse women in these data were a superior group in social adjustment, and were also distinguished significantly from the hyper-nasal women ($t = 2.609$) and from the breathy women ($t = 2.769$). It seems entirely possible that the hoarse women had vocal deficiencies with some rather clear physical cause such as sinus drainage (not uncommon in Minnesota), and not associated with Social Adjustment as measured by the inventories.[32]

Social Adjustment scores did not make significant distinctions among men in these vocally deficient groups in this

[31] Fisher's "t" corresponds to the critical ratio, but is better adapted to small samples.

$$t = \frac{M_1 - M_2}{\sqrt{\left(\frac{d^2_1 + d^2_2}{N_1 + N_2 - 2}\right)\left(\frac{1}{N_1} + \frac{1}{N_2}\right)}}$$

[32] That these women were not suffering from a purely temporary quality difference which might have been caused by a cold is suggested by the fact that they were rated low on quality in the first testing several weeks before the second observation. At Brooklyn College the percentage of hoarse voices would be much higher, and inspection of Bell scores on clinic cases suggests that another pattern of relationship might emerge in the Brooklyn College population.

population. In these data the hoarse and breathy men are low on social adjustment, but the numbers are too small to make conclusions justifiable.

More significant differences emerged on the Bell Inventory than on the Minnesota Scale for Social Adjustment.

Summary and Conclusions

From this investigation two conclusions may be drawn so far as this population is concerned:

A. Two lines of evidence point clearly to relationship between vocal attributes *in toto* and social adjustment so far as the latter is measured by personality scales of the self-inventory type.

1. First, voice ratings by fellow students in Part I, with voice in context of the total speech personality, showed significant relationships with social adjustment as measured by the Bell Inventory.
2. Second, with voice isolated from the individual's total stimulus value in Part II, with expert judges making the ratings, with another inventory as the index of social adjustment, and on another student population, the same picture of relationship emerged between vocal efficiency in quality, pitch, and force, and social adjustment. There is a moderate and significant tendency for students who rate low on Social Adjustment to have unpleasing voice or low vocal efficiency as rated by experts. The trend is the same for all three vocal attributes—quality, pitch, and force for both men and women, but the relationship is most stable and significant in voice quality.

B. When attention was confined to the area on the personality inventories where relationship had been most consistent, the social adjustment area, and when *specific* types of vocal habits were considered, we again had two methods of approach. The first yielded evidence pointing to the presence of a moderate relationship; the data emerging from the second were meagre.

1. First, students' use of terms describing vocal characteristics in Part I (judged in context of total speech personality) showed some labels to have popular value in differentiating students with poor social adjustment from those with good social adjustment as measured by the Bell Inventory. A greater number of terms had differentiating value for men than for women, which may mean that our vocal stereotypes are more thoroughly defined for men than for women. The differentiations were in the expected direction; that is, significantly more students with Social Adjustment scores in the highest quartile had favorable terms applied to them, or were free from adverse labels on voice.
2. Second, in Part II, where isolation by expert judges was made of specific unpleasant qualities among 69 students ranked low on quality, conclusions are limited by the small numbers in each category. The fact that a-resonant as a term when applied to this population seemed to differentiate women with poor social adjustment (the retiring on Bell's scale) from those who were more aggressive and mature in social relationships, tends to support the contention of many teachers of speech that "thin," "oral" voices among women are often symptoms of lack of maturity, unwillingness to accept social responsibility, desire to cling to childish dependence. This emergence of small relationships checks with the popular differentiating value of "weak force" in Part I, since a causal factor in inadequate resonance is lack of muscle tonus or elasticity of the laryngeal valve, which also causes "weak" force.

   Whereas more terms differentiate the social adjustment levels of men in popular judgments in Part I, it is the women whose social adjustment is differentiated by specific quality descriptions in Part II among the vocally deficient group. The number of men in each classification of vocal deficiency in Part II was very small in this population.

On the basis of these data we are not justified in saying that any marked sex differences exist in *amount* of relationship between general vocal efficiency and personality, although differences in *types* of vocal deficiency are suggested, and there is some tendency for emotional adjustment to influence voices of men more than women, and neuroticism and

lack of self-sufficiency to show up in vocal inefficiency of women to a greater extent than among men.

This effort to probe relationships between specific vocal deficiencies and scores on personality inventories places a great strain on the inventories which they cannot be expected to meet to our complete satisfaction in their present stage of development. It does seem important, however, that even with such coarse instruments for the measurement of adjustment, some differences in vocal characteristics do emerge among college speech students. The Bell Adjustment Inventory seems to be the most dependable of those used for isolation of characteristics which are reflected in vocal habits.

Exactly what personality characteristics are isolated under the term "Social Adjustment" we can define only by generalizations through other labels,—unless we wish to avoid the inferential level entirely and break down the analysis to all the specific questions included in the scoring for this area on the respective inventories used. As has been explained, Bell's Social Adjustment area supposedly differentiates individuals who are submissive and retiring in their social contacts from those who are aggressive in social contacts. On the Minnesota Scale high scores on the Social Adjustment area are defined as indicative of the gregarious or socially mature individual, whereas low scores characterize the person who is socially inept or "under-socialized" in his relations with other people. It is on the scores of these scales that we found the relationships with voice ratings to be most marked and consistent.

The correlations uncovered in this investigation, although not high enough to permit diagnosis or prediction in individual cases, are consistent in direction in both parts of the research, and indicate a definite trend in relationship between voice and personality in the social adjustment area in the speech student population at the University of Minnesota. The differentiation in social adjustment made by some specific terms describing voice is a recommendation of the value of further research on this interesting question in the psychology of personality.

Our results on this population do suggest the advisability of giving consideration to adjustment problems when working with inefficient habits of vocalization. Like Flemming and Moore we must conclude that remedial procedures based on voice exercises and drills may be futile in themselves if we do not try to increase the individual's ability to make satisfactory adjustment especially in the social area. That is, the teacher must take into consideration the fact that to some extent, or in some cases, the vocal habit results from general style or pattern of social adjustment. It follows that correction may involve psychological procedures, since in order to make fundamental changes in voice, readjustment may have to be made in related characteristics of personality.

AN ANALYTICAL STUDY OF THE SOCIAL AND SPEECH ADJUSTMENT OF GOOD AND POOR SPEAKERS BY MEANS OF THE AUTOBIOGRAPHIC METHOD*

KATHERINE F. THORN AND BRYNG BRYNGELSON
University of Minnesota

I. Introduction

INVESTIGATORS in the field of speech have been concerned with an interesting and, at the same time, difficult problem: How does a person become a good speaker? Specifically, what operates to produce a speaker who is able to be at ease before an audience, to hold the audience's attention, and to be regarded by his listeners as an effective speaker?

Some investigators have been interested in trying to assess the effectiveness of different methods of teaching speech. Other experimenters, feeling that speech performance in the present depends on many factors in the speaker's life experiences, have endeavored to discover what the experiences have been. Murray conducted a study[1] in which he sought the causes of speech under-development and distortions of development.

Murray states that a study of the case histories of good and poor speakers plainly showed marked advantages in the environment in which the better speakers had developed:

> Although there were now and then exceptions, the better speakers came from localities and families of the high cultural and social status, they had generally received definite speech training either through family influence or courses in school, usually had marked social advantages, but at the same time had been subject to a good balance of successes and failures in their experience. They had tended to lead rather well-balanced lives.[2]

In general they had received more adequate medical care. "In short, their superior speech development was the result of a more satisfactory inheritance and environment," Murray concludes.

For the poor speakers:

> conditions of childhood and adolescence were not favorable in many respects. Although occasionally a good speaker would come from what appeared to be a poor environment for speech development, generally it may be said that a background that placed the growing child's life under marked stress and strain had a pronounced bad effect.[3]

The social and cultural status of these speakers, he said, was not high; they had received

> little or no consciously directed speech training; parents were not trained or effective speakers; they avoided speech courses; their social lives tended to be meager or lopsided; their lives generally had been less balanced and were more full of disappointments because of the fewer privileges and opportunities and a lower economic status. Frequently the physical inheritance was less robust.[4]

There are other approaches which may be used to investigate the problem of present speech behavior in relation to past experience. Murray's method might be described as the "structured" approach, by means of which answers to specific questions were secured, and the answerer's contributions were channeled by the investigator's framework of inquiry. This method has advantages

*A condensation of a thesis submitted in partial fulfillment of the requirement for the degree of Master of Science in the University of Minnesota. Special thanks are due to Drs. Spencer F. Brown and Howard Gilkinson for their constant assistance and advice.

[1] Murray, Elwood, "A Study of Factors Contributing to the Mal-Development of the Speech Personality," SM III, (1936), 95-108.

[2] *Ibid.*, p. 101.

[3] *Ibid.*, p. 105.

[4] *Ibid.*

in nomothetic research, for the items or factors secured are more easily comparable. However, as Allport states:

> The act of writing [a life history], especially if a questionnaire-guide is followed, places an implicit conceptualization upon a case. Such cardstacking is particularly dangerous in nomothetic research, which, by its standard instructions, may put into each life the uniform dimensions that it takes out . . . if the writer is given maximum freedom, we may *hope* that he will of his own accord make the implicit conceptualization most suitable to his case.[5]

It is apparent that in the selection of material to be included in any life history there is a certain degree of channeling and conceptualization. However, the examination of a group of autobiographical sketches which have a minimum of superimposed structure from without is a means of testing the conclusions which Murray has drawn using the structured approach.

Cavan, Hauser, and Stouffer[6] state that "it would seem that the value even of qualitative insights is enhanced if a number of competent observers, reading the same document, should make the same inferences." It would appear especially important in the analysis of unstructured autobiographies to employ several judgments regarding the life history data.

The use of a comparatively unstructured autobiography and a group of judges to analyze the life histories should then avoid certain dangers inherent in the structured life history and the single judge situation. There is still another precaution that may be taken. Many evaluations of life experiences of good or poor speakers are made by a judge who knows, *a priori*, the present speech ability of the writer. There arises the question of the judge's interest and bias operating as a selective factor in the support of what he feels are significant aspects of the life experiences. One would expect interest and bias to operate in any judgment of unstructured material, but a judge's ignorance of a speaker's rating might be expected to result in less structured analysis.

It is possible that some of Murray's results were greatly influenced by the rather extensively structured approach which he used. For the purpose, therefore, of investigating the life experiences of good and poor speakers, using a relatively unstructured approach, the present investigation was undertaken. The specific aims of the study may be stated as follows:

1. To determine whether the factors Murray found with a structured approach in the life histories of good and poor speakers are found by a group of psychologically trained judges examining relatively unstructured autobiographical sketches of good and poor speakers.
2. To determine what, if any, other factors are found in such autobiographies under these conditions.
3. To discover what differences, if any, are present in the evaluations of life history material by judges who know the speech ability of the writer of the autobiography and judges who do not.

II. Procedure

During the early weeks of the fall quarter of 1941, each of the 354 students in the Fundamentals of Speech classes in the University of Minnesota gave a classroom speech which was heard and rated by three judges, two of whom were members of the instruction staff of the Speech Department, and one of whom was an undergraduate student majoring in Speech. The judges were asked to rate each speaker on the basis of "gen-

[5] Allport, Gordon W., *The Use of Personal Documents in Psychological Science*, (Social Science Council, 1942), Bulletin 49, p. 183.

[6] Cavan, R. S., Hauser, P. M., and Stouffer, S. A., "Note on the Statistical Treatment of Life History Material," *Social Forces*, IX (1930), 200-203.

eral effectiveness" in speech performance, using the Gilkinson-Knower Speech Problem Survey Scale.[7] The reliability of such ratings on a similar study[8] was .77. The ratings of the three judges were averaged to produce a single score for each speaker.

Fifty female speakers whose scores were in the upper quartile or lower quartile of the total distribution were asked to attend a meeting on March 2, 1942. Forty-eight girls attended this meeting at which Dr. Bryng Bryngelson, Associate Professor of Speech and Director of the University Speech Clinic, explained that their cooperation was desired in a study which was designed to discover what factors in the lives of speech students seemed to have played an important part in the present speech adjustment of the individuals. None of the speakers was told that she had been selected because she was a good or a poor speaker.

Dr. Bryngelson explained that for the purposes of this study autobiographies would have to be written. He said that if he were asked to follow such a request, his autobiography would probably include certain features which he felt were of influence on his present speech attitudes and speech behavior. For approximately thirty minutes he recounted those experiences and his evaluations of their influence.

He stressed the fact that there was no stereotyped method of organizing the material, that his organization of statements about his life should not be taken as the only way of organizing such data, and that length of the autobiographical sketch would vary from one person to another.[9]

The forty-eight girls signified their willingness to write their autobiographies and agreed to turn them in to the experimenter within a month after the meeting. Of this group thirty-eight girls[10] submitted manuscripts, all of which were used in this study.

Marked differences in speech skill were indicated by the scores obtained by the speakers in the two groups. Sixteen of the thirty-eight subjects had received a score of 7.00 or higher, indicating "relatively skillful" performance; their scores fell in the upper quartile of the scores for the Fundamentals of Speech population for that quarter. The range of scores was from 7.00 to 8.33, with a mean score of 7.27. Hereafter, these subjects will be referred to as the "Good Speakers." The remaining twenty-two subjects had received a score of 4.67 or less, indicating either "handicapped seriously" in speech performance or in the lower group of "fair but rather ineffective" speakers; their scores fell in the lower quartile of the total distribution. The range of scores was from 3.00 to 4.67, with a mean score of 4.14. Hereafter, these subjects will be referred to as the "Poor Speakers."

The quarter grades in Speech for these two groups of speakers also showed marked differences in speech ability.

[7] On this scale a rating of 1, 2, or 3 represents "handicapped seriously;" 4, 5, or 6 indicates "fair but rather ineffective;" and 7, 8, or 9 signifies "relatively skillful." "General effectiveness" represented the judge's over-all reaction to the speech performance as a whole.

[8] Gilkinson, H., and Knower, F. H., "A Study of Standardized Personality Tests and Skill in Speech," *Journal of Educational Psychology*, XXXII (1941), 161-175.

[9] The subjects were told that an arrangement could be made with their speech instructors whereby this activity could be substituted for a regular classroom assignment. One of the subjects made such an arrangement.

[10] These thirty-eight subjects gave permission for judges to examine their autobiographies after all identifying features such as names, localities, schools, etc., had been replaced either by a dash or a substitute name.

The honor point ratio[11] for the good speakers was 2.250; for the Poor Speakers, 0.909.

The experimenter asked five women and seven men, all of whom had psychological training and experience in working with students, to read a number of the autobiographies and to follow certain directions in selecting items from the life histories.

The four judges[12] in Group I were told that the autobiographies had been written by girls in the Fundamentals of Speech classes who had given a speech which had been rated Good or Poor, as far as general effectiveness was concerned, by a committee of three judges.[13] Each of these judges was asked to examine one-half (19) of the manuscripts and to select the items from the life history of each speaker which he felt were positive in their influence on speech adjustment, and those items which he felt were negative in their influence on speech adjustment. Hereafter, the items will be referred to as the "Positive" or "Negative" items. Each judge was asked to refer to each item he selected by page and line numbers and to make a brief statement of his reason for his evaluation of each item. Each judge was also asked to rate the person as a good or poor speaker on the basis of his evaluation from the autobiographical sketch.

Group II consisted of eight judges.[14] These judges were asked to examine one-half (8) of the Good Speakers' autobiographies or one-half (11) of the Poor Speakers' autobiographies and were told from which group the autobiographies came. Apart from this variation and the fact that the judges in Group II were therefore not asked to rate the speaker as Good or Poor, there was no difference in the instructions given to the two groups of judges. No attempt was made to structure the judges' approach to the items, either by giving them the list of Murray's factors or by suggesting any other criterion upon which to base their selection.

To test the reliability of the selection of items and evaluations, eleven of the judges re-examined five of the autobiographies following the same instructions which had been given prior to the first reading; one judge re-examined four autobiographies. Seventy-two per cent of the items selected by the judges in Group I in the first reading were selected in the second reading. Seventy-eight per cent of the items selected by the judges in Group II in the first reading were selected in the second reading.

The experimenter analyzed the items selected by the judges and the judges' statements regarding the items. The items selected by the four judges who read each autobiography were compared. The list of factors considered by Murray as important in influencing speech development was compared with

[11] The honor point ratio is computed by allowing 3 points for an A, 2 for a B, 1 for a C, and 0 for a D.

[12] Group I of the judges consisted of an Assistant Professor of Nervous and Mental Diseases, an Associate Professor of Speech who had received his Ph.D. in Psychology, an Associate Professor of Social Work and Assistant in Mental Hygiene, and a former Speech Clinician who had majored in Speech and Psychology.

[13] Two of whom were members of the Speech instruction staff and one of whom was an undergraduate student majoring in Speech.

[14] Group II judges consisted of a Teaching Assistant in Child Welfare, a Teaching Assistant in General College with counselling duties, an Instructor in Speech whose Ph.D. had been secured in Psychology, a Director of Nursing Education at Hamline University, a Speech Clinician at the University of Minnesota Speech Clinic, a Teaching Assistant in the Speech Clinic, a counselor in the University Testing Bureau, and a Speech Clinician in the Minneapolis Public Schools.

TABLE I

ITEM COUNT

Group I			Group II			Combined Groups		
+	−	Total	+	−	Total	+	−	Total
662	760	1422	634	697	1331	1296	1457	2753

the items selected by the judges. The experimenter evaluated each autobiography from the standpoint of the relative amount of analysis the writer had shown, and also made a direct comparison of Murray's items with the autobiographies.

III. RESULTS

Length of Autobiographies

The autobiographies written by the Good Speakers ranged in length from 477 words to 8266 words, the mean number of words being 2200. The Poor Speakers' autobiographies ranged from 282 words to 7852 words, with a mean of 1891. There is no statistically significant difference between the groups of autobiographies as to length, either as rated or as judged by the groups in Group I.

Items Selected by the Judges

Table I shows the item count which was obtained by tallying all the judges' statements regarding the lines referred to in the autobiographies as significant in their positive influence or in their negative influence toward speech adjustment. The number of tallies for any reference by a judge was determined by the number of different statements[15] made concerning the lines noted.

Positive and Negative Items

The judges' selection of items which they felt were of a positive or negative influence in their effect on speech adjustment revealed differences. The range in total number of items selected from an autobiography extended from two items by one judge on one autobiographical sketch to 125 by another judge on another autobiography. The widest range for any single autobiography was from nineteen items by one judge to 125 items by another. This was for Autobiography Number 24, which contained 8266 words.

The results of the grouping of items selected by the two groups of judges for both groups of speakers show no statistically significant difference between the number of Positive items chosen for the Good Speakers and the number of Positive items chosen for the Poor Speakers by Group I judges who did not know the speech rating of the speakers. There is a critical ratio of 3.51, indicating a reliable difference, between the number of Positive items chosen for the Good Speakers and the number of Positive items chosen for the Poor Speakers by the judges in Group II, who knew whether the writers had been rated as Good or Poor Speakers.

There is no significant difference between the numbers of Negative items chosen for these two groups of speakers, by either Group I judges or Group II judges.

When the number of items selected for the same group of speakers by the Group I judges is compared, there is no significant difference between Positive and Negative items. When the Group II results are compared, there is no significant difference between the number of Positive and Negative items chosen for the Good Speakers; there is

[15] For example: Autobiography 9, page 1, line 13-14: Home in poorer section; few friends among children. This was tallied as 2 items.

TABLE II

POSITIVE AND NEGATIVE ITEMS SELECTED BY COMBINED GROUPS OF JUDGES

Rated Good Groups I and II				Rated Poor Groups I and II				
+ Items		— Items		+ Items		— Items		
Mean No.	σ	Mean No.	σ	Mean No.	σ	Mean No.	σ	diff. / $\sigma_{diff.}$
10.48	10.20			7.10	8.72			2.01
		9.61	14.85			9.57	9.995	.02
10.48	10.20	9.61	14.85					.385
				7.10	8.72	9.57	9.995	1.75

a reliable difference, critical ratio 4.38, between the number of Positive and Negative items chosen for the Poor Speakers.

When a comparison of the number of items chosen by the two groups is made on the same group of speakers, no statistically significant difference appears.

Table II contains the comparison between the number of Positive and Negative items selected for both groups of speakers when the results for both groups of judges are combined. There is no statistically significant difference between any of these comparisons. The greatest differences occur when a comparison of Positive items for the Good Speakers and Positive items for the Poor Speakers is made. Here the critical ratio is 2.01.

Judges' Evaluation of the Probable Speech Ability of the Writers

In addition to selecting items from the autobiographies, the judges in Group I were asked to indicate the probable speech ability of the writers whose autobiographies they examined. Since two judges in this group examined each autobiography, there were seventy-six judgments. Of these, forty judgments were the same as the original rating; thirty-six were the opposite.

The autobiographies were reclassified according to the judges' rating of the writers' probable speech ability, and an item count[16] made on the basis of this new classification. An analysis of these results shows no statistically significant difference between the number of items chosen for either the Good or Poor Speakers.

Agreement of Judges in Items Selected

The problem of determining the agreement of the judges in the selection of items was complicated by (a) the variety of types of statements made regarding the lines referred to in the autobiography, some being of the "sub-trait" level, some "trait" level, and some "conceptualization" level;[17] (b) the differences in the actual lines referred to, some referring to a long section in the sketch, with an "over-all" statement about its significance, others referring minutely to sections of this same long passage, with explicit reference to each detail within the passage that was deemed significant; (c) the overlapping between the judges' references to lines when one judge's reference was made to lines 22-30, for example, and another judge's reference was made to lines 25-36. This problem necessitated the use of an arbitrary method of determining agreement. The following plan was

[16] This count involved only the judgments by the Group I judges, since the judges in Group II were informed of the speakers' ratings prior to their examination of the autobiographical sketches.

[17] Cartright, D., and French, J. R. P., Jr. "The Reliability of Life-History Studies," *Character and Personality*, VIII, (1939), 110-119.

TABLE III

AGREEMENT OF JUDGES IN SELECTION OF POSITIVE ITEMS

Category	Good Speakers			Poor Speakers			diff. / σ diff.
	Number of Items	Number of Different Cases	% of total cases	Number of Items	Number of Different cases	% of total cases	
Favorable family situation	39	10	62.5	17	7	31.8	1.96
Favorable social opportunities and relationships	17	6	37.5	19	10	45.5	.50
Speech training and experience	32*	12	75.0	8*	6	27.3	3.31
Extra-curricular activities including speech	44	13	81.3	24	12	54.5	1.86
Favorable "boy-girl" relationships	7	3	18.8	4	4	18.2	.05
Good grades in school	3	3	18.8	3	2	9.1	.84
Travel	1	1	6.3	3	3	13.6	.77
Self-confidence	15	6	37.5	6	3	13.6	1.69
Enjoyed school more	—	—	—	1	1	4.5	.22
Infectious laugh	—	—	—	1	1	4.5	.22
Sent away to private school	—	—	—	1	1	4.5	.22
Total	126	14 different		79	16 different		

*Not added

adopted. When one judge's reference to an item was included in the reference made by another judge and both references were indicated as Positive or indicated as Negative, it was considered agreement. When the lines selected by one judge extended beyond those of another judge, but both were in agreement, and no additional interpretation was added in the opposite column, it constituted agreement. When one judge interpreted the item in conceptualization terms, and another judge in trait or sub-trait terms, but both were listed in the same influence category, it was classified as agreement.[18]

[18] For example:
Autobiography 1
Judge 1—No Comment
Judge 2—page 2, lines 14-19—criticized for shyness
Judge 3—page 2, lines 14-18—shy as a child
Judge 4—page 2, lines 14-16—"I was an awful baby—shy and wouldn't talk."
This was tallied as one agreement by three judges.

Occasionally a judge grouped a number of lines together, giving a total evaluation to the group of experiences related within those lines. Another judge referred to each specific instance he felt was significant within the group. The largest number of such individual items was counted as agreement between the two judges.

The list of items on which there was agreement by three or four judges was examined, and several categories were set up so that the comparisons between the two groups might be made more readily. These categories embraced the following general fields: family situation, social relationships, school experiences, speech experience and training, relationships to boys, travel, and emotional reactions. Table III reveals the comparison of the two groups of speakers in respect to the items which three or four judges agreed were significant.

TABLE IV

AGREEMENT OF JUDGES IN SELECTION OF NEGATIVE ITEMS

Category	Good Speakers			Poor Speakers			diff.
	Number of Items	Number of Different Cases	% of total cases	Number of Items	Number of Different cases	% of total cases	σdiff.
Feeling of physical inferiority	25	11	68.8	20	9	40.9	1.79
Unfavorable family situation	26	8	50.0	33	14	63.6	.84
Feeling of social inferiority	15	5	31.3	20	11	50.0	1.19
Shyness, fear	8	6	37.5	11	7	31.8	.36
Unfavorable speech experiences	5*	3	18.8	7*	5	22.7	.29
Unfavorable school experiences including speech.	11	6	37.5	17	7	31.8	.36
Unfavorable "boy-girl" relationships	1	1	6.3	13	6	27.3	1.86
Mood swings, emotional instability	12	8	50.0	8	2	9.1	2.94
Jealousy of sister	—	—	—	3	3	13.6	1.86
Seclusive	—	—	—	2	1	4.5	.22
Disappointment over loss of singing ability	—	—	—	1	1	4.5	.22
Ashamed of small town background	—	—	—	1	1	4.5	.22
Tense and unenthusiastic in speech	—	—	—	1	1	4.5	.22
Distrust of people	1	1	6.3	—	—	—	1.04
Resistance to discussing personal affairs	3	1	6.3	—	—	—	1.04
Stealing	2	1	6.3	—	—	—	1.04
Total	104	15 different		130	21 different		

*Not added

The only statistically significant difference between the two groups of speakers in this table is that of speech training and experience, where seventy-five per cent of the Good Speakers as compared with twenty-seven per cent of the Poor Speakers had been listed by the judges. The critical ratio is 3.31.

Table IV shows the results of the comparison of the Negative items agreed upon by three or four judges for the two groups of speakers. There is one difference which approaches significance. That is "mood swings, emotional instability" where fifty per cent of the Good Speakers as compared with nine per cent of the Poor Speakers were so described. The critical ratio is 2.94.

Disagreement of Judges on Selection of Items

The difficulty in tallying instances of disagreement necessitated the use of an arbitrary method similar to that used for agreement. Table V shows the results when two judges agreed on an item and the other two judges disagreed on the same item, and when two judges agreed and one judge disagreed. This constituted "disagreement" among judges.

It was stated earlier that the total number of items listed by the judges in both groups was 2753. When the analysis of

TABLE V

DISAGREEMENT OF JUDGES IN EVALUATION OF ITEMS

Category	Good Speakers			Poor Speakers			Total No.	
	Number of Items	Number of Autobiographies	% of total auto.	Number of Items	Number of Autobiographies	% of total auto.	Items	Auto.
Family background and relationships	15	6	38	27	11	50	42	17
Social relationships	13	8	50	9	5	23	22	13
Physical condition	2	1	6	1	1	5	3	2
School adjustment	3	2	13	9	7	32	12	9
Personality	10	7	44	5	5	23	15	12
Speech	3	2	13	1	1	5	4	3
"Boy-girl" relationships	—	—	—	4	3	14	4	3
Good grades	—	—	—	4	3	14	4	3
Travel	—	—	—	1	1	5	1	1
	—	—	—	—	—	—	—	—
Total	46	13 different	81	61	17 different	77	107	30 different

items for agreement of disagreement was made, it was necessary to add to this count, in the manner illustrated by the previous examples. Thus, 553 such items were added, producing a total of 3306 items in the "inflated" number.

There were a large number of items on which two or fewer judges expressed an opinion. Since the variety and number of these items was great, and since the general trends of agreement and disagreement among the judges could be evaluated in terms of the greater number of judgments stated, an attempt at analysis of the remaining items seemed inadvisable. In general, it may be stated that the subtraction of agreement items from the total number of items reported leaves what may be considered, for all practical purposes, the number of items upon which there was disagreement among the judges.

Incidence of Factors Listed by Murray in These Autobiographies

The judges' approach to the evaluation of the autobiographical sketches in this study was unstructured as far as any categories within which they were to center their attention. The categories which emerged as the experimenter classified the judges' selection of items resembled, in some respects, Murray's list of factors which was described in Part I. Since they were not directly comparable in all respects, the experimenter read the thirty-eight autobiographies and tallied instances of the occurrence of each of the factors listed by Murray, for both the Good and the Poor Speakers. The autobiographies were divided into Good and Poor groups before the analysis was made. In this way the procedure resembled that used in the structured approach.

Problems that were encountered in this analysis included the following: in many instances no mention was made of social or cultural status, and the experimenter had to attempt to evaluate this on a subjective basis; most of the autobiographies did not mention whether there had been definite speech training or not; the category of "good balance of success and failure" was too vague to apply; many autobiographies did not mention anything about health or medical care, so that the determination of what constituted "more adequate medical care" was difficult to decide; most of the autobiographies did not mention anything about the speech ability of the parents. Table VI shows the re-

TABLE VI

COMPARISON OF MURRAY'S FACTORS WHICH APPEARED IN LIVES OF GOOD SPEAKERS WITH AUTOBIOGRAPHIES OF GOOD AND POOR SPEAKERS

Murray's Factors	Good Speakers		Poor Speakers	
	No. of autobiographies	% of total no. of autobiographies	No. of autobiographies	% of total no. of autobiographies
Localities and families of high cultural and social status	8	50	12	55
Definite speech training	12	75	5	23
Marked social advantages	11	69	17	77
More adequate medical care	5	31	1	5

TABLE VII

COMPARISON OF MURRAY'S FACTORS WHICH APPEARED IN LIVES OF POOR SPEAKERS WITH AUTOBIOGRAPHIES OF GOOD AND POOR SPEAKERS

Murray's Factors	Good Speakers		Poor Speakers	
	No. of autobiographies	% of total no. of autobiographies	No. of autobiographies	% of total no. of autobiographies
Social, cultural status not high	1	6	7	32
Little or no consciously directed speech training	1	6	—	—
Parents not trained or effective speakers	—	—	1	5
Meager, lop-sided social lives	8	50	13	59
Avoided speech courses	2	13	—	—
Physical inheritance less robust	3	19	5	23

sults when the autobiographies were checked for the occurrence of the factors which Murray said he found in the lives of the Good Speakers. Since the category of "medical care" cannot be taken as a strict measure of its presence or absence, there is left only the category of "definite speech training" in which there is a substantially large difference between the Good and Poor Speakers.

Table VII shows the results when the autobiographies were checked for the occurrence of the factors which Murray said appeared in the lives of the Poor Speakers. Here the "little or no consciously directed speech training" cannot be taken as a final measure, nor can "parents not trained or effective speakers." "Avoided speech courses" was mentioned in only two cases, and is felt to be an inadequate picture of the group as a whole, if a structured questionnaire were given. This table reveals a larger number of Poor Speakers coming from a social and cultural status that is not high, but in the other categories there is no substantial difference between the groups.

Another problem encountered in the attempt to discover these factors was the matter of temporal relationships. Murray did not state whether he found the factor only once within the life of an individual, or whether there was a consistent appearance. In some of these life histories one could find reference to economic insecurity, for example, at one time in the life of the writer, but at another time in the individual's life there would be a change to economic

TABLE VIII

SUMMARY OF "GIVE-AWAYS" IN AUTOBIOGRAPHIES OF GOOD AND POOR SPEAKERS

Speakers	Both judges rated GOOD	1 judge rated GOOD 1 judge POOR	Both judges rated POOR	Total
Good	8 (50%)	4 (25%)	1 (6%)	13 (81%)
Poor	3 (14%)	1 (5%)	4 (18%)	8 (36%)

security and cultural advantages. However, all such references are included in Tables VI and VII regardless of the fact of their continuance or change in status in the lives of the writers.

The percentages in these tables must be interpreted very carefully, and it is extremely difficult to know how far one can go in the interpretation, since the factors in some instances are difficult to assess and since mere non-appearance of any mention of a factor does not signify its having been absent in the life of the writer.

"Give-Aways"

Since the judges in Group I were asked to evaluate the probable speech ability of the writers whose life histories they examined, and these judges were not informed as to their previous rating in speech, it seemed of interest to examine the autobiographies in an effort to discover which writers, if any, included definite statements regarding their speech abilities and attitudes toward speech activities.

The experimenter listed such references. Table VIII presents the results. The percentages indicate the per cent of the total number of autobiographies in each group, i.e., sixteen Good Speakers and twenty-two Poor Speakers.

IV. DISCUSSION, SUMMARY, AND CONCLUSIONS

Discussion of Data

This study attempts to hold up to investigation statements which are made concerning factors of causation based on investigations through a structured approach. The data secured in this study supports the statement that "the total validity of the judgments of each experimenter was greater than the total agreement (reliability) between them."[19] Since items were listed chronologically by the judges there is no indication as to the *relative* importance he may attach to any specific item. The areas selected by the judges reveal awareness of not only the objective situation alone but also the person's reaction to his environment. It is difficult to assess the importance of the quantitative findings except insofar as they give one a general estimate of areas in which the judge felt there was a significant influence. The lack of specificity in Murray's statements of causative factors[20] impedes direct comparison with items selected in this study. His finding that the good speakers have received training in speech is borne out here, but the conclusion which he draws that "necessarily . . . the person be subjected to properly directed speech training and experiences all the way from pre-school and kindergarten through the more advanced divisions of our institutions of learning"[21] does not seem to follow. Such a statement ignores the possibility that the better speakers engaged in speech activities because of proficiency and ease in those activities and assumes that the speech experiences *produced* the speech proficiency. The

[19] Cartright and French, *op. cit.*, p. 113.
[20] Murray, *op. cit.*, p. 108.
[21] Murray, *ibid.*

judges' evaluations of the speech ability of the writers of the autobiographies were no better than what might have been expected by pure chance. Through a combination of questionnaire, interview, and unstructured life history, or through group discussion among the judges, or through a series of psychiatric interviews, there might appear more deep-seated differences which do not appear in this study.

Summary and Conclusions

Thirty-eight female Fundamentals of Speech students at the University of Minnesota, sixteen of whom were rated as good speakers and twenty-two as poor speakers, wrote autobiographical sketches in which they attempted to describe what factors in their lives had influenced their present speech adjustment.

Two groups of psychologically trained judges examined the autobiographies for items which they evaluated as having positive or negative influence on the speech adjustment of the writers. Each of the four judges in Group I rated nineteen of the writers as good or poor speakers, without previous knowledge of their speech rating. The eight judges in Group II were told in advance the rating of the speakers.

An analysis of the judges' items was made in regard to number and types of positive and negative items selected, agreement and disagreement between the judges, and comparison with factors listed by Murray. The experimenter examined the autobiographies for evidence of the presence of Murray's factors and for any reference to speech ability made by the writers.

The following conclusions may be drawn from the data:

1. There was no statistically significant difference between the good and poor speakers in the number of words in the autobiography.

2. There were no statistically significant differences between the number of items chosen by the judges from the autobiographies of good and poor speakers.

3. The judges' evaluation of the speech ability of the writers on the basis of the autobiography alone was no better than chance, and did not seem to be influenced by any references to speech training and experience in the sketch.

4. Three or four judges agreed on a total of 230 items for good speakers in sixteen different autobiographies, and 209 items for poor speakers in twenty-two different autobiographies.

5. These items were grouped into the following categories: family situation, social relationships, school experiences, travel, speech training and experience, relationship to boys, and emotional reactions. Of these fields there were only two reliable differences between the good and poor speakers: speech training and experience of a positive nature (seventy-five per cent of the good speakers, twenty-seven per cent of the poor speakers; critical ratio 3.31); mood swings and emotional instability of a negative nature (fifty per cent of the good speakers, nine per cent of the poor speakers, critical ratio 2.94).

6. Three or four judges disagreed on a total of 107 items occurring in thirty different autobiographies.

7. These items were grouped into the following categories: family background and relationships, social relationships, physical condition, school adjustment, personality, speech training and experience, boy-girl relationships, school grades, and travel.

8. To the extent to which the fac-

tors listed by Murray could be applied quantitatively to these data, only three notable differences between the good and poor speakers appeared: speech training (seventy-five per cent of the good speakers, twenty-three per cent of the poor speakers); more adequate medical care (thirty-one per cent of the good speakers, five per cent of the poor speakers); and social, cultural status not high (six per cent of the good speakers, thirty-two per cent of the poor speakers).

9. The findings of this study indicate that the unstructured autobiography is not superior to the structured biography as an instrument for determining the influence of past experiences upon speech performance.

"SHORT 'O' VOWELS" IN AMERICAN SPEECH: MASSACHUSETTS

CLYDE W. DOW
Michigan State College

Introduction

ONE who listens to the speech of different sections of the United States finds considerable variation in what is sometimes referred to as the "short 'o' vowel." According to various authorities, the predominant use in the three major dialect regions may be [ɑ], [ɒ], or [ɔ].

It is the purpose of this investigator to sample the speech of various localities so that a more accurate picture of the mixture, relative use, and (if possible) the boundaries of the several "short 'o' vowels" may be obtained.

This study was confined to the state of Massachusetts. There were three major reasons for limiting the present study to this area. (1) A rough sampling, which was done several years ago, indicated that there was great variation in the use of these vowels throughout New England. (2) The same sampling, as well as acquaintance with students in the classroom, indicated that there was a rather definite division between the use of [ɑ] and [ɒ] within the state. (3) Almost the entire student body of Massachusetts State College is drawn from within the state, and a good source of subjects was available.

Subjects

Sixty-five students at Massachusetts State College volunteered to serve as subjects. Nearly all were members of the sophomore class during the academic year 1943-44. Each subject had lived in a given town from at least two years of age until coming to college. Most still lived in the town in which they were born. Sixty subjects were girls, five were boys. Most of the subjects were from the lower and middle groups of the socio-economic middle class.

Area

More than forty-five towns from Plymouth on the East to Williamstown on the West were included. A diligent effort was made to include every town in which [ɑ] had been heard, or was reported to have been heard.

Materials and Apparatus

The materials consisted of: (1) a short narrative, approximately one minute in length, on the subject of American Indian clothing and cooking (in this general context were ten "short 'o' " words selected for the study); (2) a simple form on which the name of the subject, home town, and the sounds the subject used in the ten words being studied could be recorded; first, as they were read and, second, as they were reproduced over the recording device.

A Western Electric Mirrophone was used to record the reading of each subject.

The ten words chosen to give a sampling of the vowels were selected on the basis of several factors, chief of which were: (1) they have been referred to by such authorities as Barrows,[1] Cable,[2] and Kenyon and Knott[3] as good indi-

[1] Barrows, S. T., *An Introduction to the Phonetic Alphabet,* (Boston, 1938), p. 33.

[2] Cable, W. A., "The [ɒ] Vowel in American Pronunciation," QJS. XXV (1939), 423-433.

[3] Kenyon, J. S., and Knott, T. A., *A Pronouncing Dictionary of American English,* (Springfield, Mass.), 1944, p. xix.

cations of the "short 'o' " sound; (2) the rough sampling, done some years earlier, suggested that these words were good indicators of the sounds within the area of the study. The ten words used were: *cloth, soft, not, pocket, rocks, hot, on, top, watch,* and *got.*

Procedure

Each subject read the narrative before a microphone, and the writer recorded the vowel in each of the words studied as the subject read. Then the reading was played back from the Mirrophone as many times as was necessary to check and report accurately the vowel which the subject used. If there appeared to be a difference between the sound the writer heard the subject produce, and the sound the writer heard from the Mirrophone, the sound from the Mirrophone was chosen for the study. The reason for this was that the recorded sound could be repeated indefinitely, while the actual reading occurred only once.

The subjects were not told what sounds were being studied.

Findings and Implications

In interpreting these findings, the reader should bear in mind the following qualifications. (1) Although there were three or four subjects from some towns, in others only one speaker was available. (2) It is reasonable to expect other variations not brought to light by this particular study. (3) Association with different dialect groups during two years of college may have influenced the pronunciation of some words. (4) Although the investigator has been a student of phonetics for eight years, and of speech in general for a far longer time, he does not claim to be infallible in his interpretation of sounds. (5) The findings apply only to the words studied, but the writer believes that the general pattern of pronunciation will not vary greatly from this sampling.

Analysis of the individual record forms, tabulation of data, discussion with classes after the data were gathered, and analysis of the tabulated material present the following:

WORDS

1. [ɑ] occurred in every word but *soft;* in *cloth* only once.
2. [ɒ] occurred in every word.
3. [ɔ] occurred in all but *not, top,* and *got.*
4. The neutral vowel was used in *got* by more than two-thirds of the readers.
5. Two interesting variations include *hot* [hʌt] from Lynn, and *soft* [soft] from Pittsfield.
6. The word *soft* appears to be a good key-word for the [ɒ] sound within the area of the study.
7. Two other words, *impossible* and *progress,* were sampled in a number of cases. These are said as [ɪmpɒsəbl̩] and [prɒgrɛs] by subjects from central and eastern Massachusetts, except for one subject from Fall River; and as [ɪmpɑsəbl̩] and [prɑgrɛs], as well as [ɪmpɒsəbl̩] and [prɒgrɛs] in the western part of the state. The British pronunciation [progrɛs] was not heard.

SOUNDS

1. [ɑ] was confined to the western part of Massachusetts, with the exception of one or more probable "islands" in the east.
2. [ɒ] was found throughout the state.
3. [ɔ] was found throughout the state.
4. The acoustic difference between [ɑ] and [ɒ] in the rapid reading of many subjects living near the boundary of the areas in which both sounds

are used was slight. On a single hearing, it was difficult to determine which sound had been used, and several repetitions by the play-back device were necessary before a decision could be made.

5. The [ɑ] sound appeared very distinct and clearly differentiated from [ɒ] in the speech of subjects from Holyoke and Pittsfield.
6. The [ɒ] sound in the speech of most of the subjects who did not use [ɑ] in any of the ten words was clearly differentiated from [ɑ].
7. The [a] of Standard Eastern [ask] appears to this investigator to be a more accurate indication of the "short 'o' vowel" than [ɑ] for many persons in western Massachusetts.

SUBJECTS

1. Twenty-eight subjects used [ɑ] in one or more words.
2. No subject used [ɑ] in all ten words.
3. Thirty-seven subjects used [ɒ] or [ɔ] (mostly [ɒ]), but not [ɑ].
4. This distribution of subjects is *not* representative of the population of Massachusetts for less then ten per cent of the total population is found in the four western counties in which [ɑ] occurs; and more than ninety per cent of the population of the state is in the area including Worcester county and east to the coast in which [ɒ] is standard except for one or two "islands."
5. Among many subjects using [ɑ]—these subjects also used [ɒ] in two or more of the ten words—there was a slight preference for [ɑ], but not a strong dislike for [ɒ]. Some subjects were indifferent; a few strongly preferred [ɑ].
6. Among subjects using only [ɒ] there was strong dislike expressed for the use of [ɑ] in the words studied.

REGIONS

1. In central and eastern Massachusetts "short 'o'" is almost always [ɒ], rarely [ɔ], and almost never [ɑ].
2. In western Massachusetts the vowel may be [ɑ], [ɒ], or [ɔ], and possibly [a].
3. If the use of either [ɒ], or [ɑ], in words of the type sampled in this study, is to be considered one of the significant differences between the General American and Standard Eastern dialects, then a *rough* boundary line between the two regions may be named the Connecticut River. A more accurate statement would be that the boundary lies between the Connecticut River and the western boundary of Worcester county.

A STUDY OF THE VOCABULARY OF RADIO*

DONALD E. HARGIS
University of Michigan

The Problem

FOR centuries scholars and investigators have examined the basic unit of speech and writing: the word. Word studies based on definition, based on finding the vocabulary; those designed to find levels, and those plotting vocabulary growth are numberless. In the multitude of these studies one type, the objective word count, frequently is to be found. The objective or quantitative word count is a tabulation of the words in selected written materials and a listing of those words in the order of frequency of occurrence.

The early attempts with word lists were to supply English speaking persons with a "beginner's vocabulary" in a foreign language and to establish systems of shorthand. In the years following these first studies hundreds of word counts have been made, some of them general and some highly specialized. With the growing interest in word counts as an aid to teaching foreign languages, the American and Canadian Committees on Modern Languages took a hand in the promotion of research.

In the English language the word count method has been extensively used as the basis for devising spelling lists. The early investigations of reading vocabulary were all by the empirical method, and it was not until after 1910 that objective studies were attempted. Perhaps the best known and the most widely used of the word lists growing out of the frequency word count studies is that of Thorndike.[1] Up to the present time it remains as the outstanding, single, original work in the field. "Thorndike's list has been almost universally considered as the ultimate in the matter of word counting. Nearly every subsequent study has used it as a basis for comparison and as a model for the technique of counting."[2]

His investigation was originally published as a list of 10,000 different words[3] which were found to occur most frequently in 4,565,000 running words taken from forty-one sources. The list was constructed to aid in the teaching of reading in the elementary schools. Since the publication of the original study, Thorndike has made a count of 5,000,000 more running words from over two hundred other sources and has included material from other studies.[4] From this last material in addition to the original study, he revised the list and extended it to 20,000 different words.

Only two studies have been made in the field of the vocabulary of radio. The first is by Dale[5] on the vocabulary level in a particular field of radio speaking. He was attempting to find the vocabulary level of radio speeches aimed at various grades in school.

The second study, by Smith,[6] is an

*A condensation of a dissertation submitted in partial fulfillment of the degree of Doctor of Philosophy at the University of Michigan.

[1] Thorndike, E. L., *Teachers' Word Book of 20,000 Words* (New York, 1931).

[2] Fries, C. C., and Traver, A. A., *English Word Lists* (Washington, D. C., 1940), p. 23.

[3] Thorndike, E. L., *Teachers' Word Book* (New York, 1921).

[4] Thorndike, E. L., *A Teachers' Word Book of 20,000 Words* (New York, 1931).

[5] Dale, E., "The Vocabulary Level of Radio Addresses," *Education on the Air* (Columbus, Ohio, 1931), p. 245.

[6] Smith, S. S., "Radio Vocabulary," QJS, XXVIII (1942), p. 1.

attempt to discover the vocabulary of radio and, specifically, the level of the vocabulary used. The study seems to have been made on the general frequency count method with the special listing of words above certain levels in the Thorndike Word List.

One of the basic faults of the work in the past is that it has been done, almost without exception, on material that was written to be read silently. The resulting word lists are not representative of the vocabulary in everyday use, but of the "literary" vocabulary of authors whose ideas have been put into print. Doubtless, for the present at least, there have been enough "word counts" in the field of written material.

The first necessity in a new study is to limit the source material so that the final word list will be useful. In radio material, which stands somewhere between the printed, written-to-be-read-silently, and conversational speech which is not written at all, we have a useful source for a word count. The following two factors recommend radio scripts as a source for a quantitative word count: the material is close to the spoken word and it is current in conception. Radio scripts further recommend themselves in that no studies of any scope have been made on this type of material. For that reason the present study is not a mere repetition of what has been done before.

An objective analysis is needed in radio for several reasons. First, it could serve as a guide for writers in the field. From the word list, writers could see which words are used and which shunned by other writers. It would serve to objectify the approach to writing. Second, this study would have value in the teaching field. When one makes a survey of the text-books in the field of radio writing, he finds references in all of them to the vocabulary. These observations range from simple warnings to use a non-complex vocabulary to lengthy discussions of the type of vocabulary which should be used. Writers, such as Abbot,[7] Barnouw,[8] Dale,[9] Carlile,[10] Whipple,[11] and Hettinger,[12] to mention only a few, constantly reiterate warnings that the radio vocabulary must be simple, non-complex, and gauged to the level and diversity of the radio audience.

It is easy to see the concern with which the teachers and the text-book writers view the problem of the vocabulary in radio writing. The point which is obvious in their observations is that their knowledge of that vocabulary has been gathered from practical writing experience, from radio production experience, or from observations as listeners. As valuable as the compilation of the results of such experience may be, their observations can lead only to general statements because of their subjective approach to the problem. With a word list made up by an objective count of radio materials, the writer and teacher could have a scale on which to base the discussion of vocabulary use.

Finally, the study should have a place in the analysis of the effect of the radio on the general public. A list, such as the one proposed, would provide an objective guide by which one could discover what is present on the air and, by comparing the list with other lists,

[7] Abbot, W., *Handbook of Broadcasting*, revised (New York, 1941), p. 86.
[8] Barnouw, E., *Handbook of Radio Writing* (Boston, 1939), p. 66.
[9] Dale, *op. cit.*, p. 247.
[10] Carlile, J. S., *Production and Direction of Radio Programs* (New York, 1939), p. 260.
[11] Whipple, J., *How to Write for Radio* (New York, 1938), p. 24.
[12] Hettinger, H. S. and Neff, W. J., *Practical Radio Advertising* (New York, 1938), p. 189.

form some idea of that vocabulary level. At the same time, comparisons could be made between types of programs. Differences in vocabulary of serials, newscasts, comedy-variety programs, and talks could be uncovered and analyzed. These differences, if existing, could be correlated with the general radio vocabulary list or outside lists. In that way some definite and objective judgment could be passed on the materials on the air and the probable influence which they would have on the speech habits of the listener.

The problem, then, was the construction of a quantitative word list compiled from selected radio materials which would be representative of the general vocabulary used in radio writing. This list was to be a count of all of the words which occur in such materials, arranged according to frequency and range of appearance. The word list so collected was to be compared and analyzed on the basis of other existing lists. In that way, the comparative level of the radio vocabulary was to be estimated; and, in addition to this, comparisons were to be made between the types of radio material used in the study.

Materials and Methods

In the studies which have been made a wide divergence of method is to be found within the framework of the frequency count. The problem was to determine what methods and materials were to be used in the present study. The fundamental problem centered about the selection of materials. The representative nature of the materials, the inclusion of all different types of scripts, and the universality of those materials, the size of the audience and the number of stations on which they were broadcast had to be considered; materials most universal in terms of the listener should be used. Another factor was the timeliness of the material; the current value of the radio material is important if a true picture is desired. From the point of view of research in the social sciences, there were other considerations as to sampling besides universality and representativeness. Such matters as the time of the year, the time of the day, the authors of the materials, the sections of the country represented, the station or network selected, and the statistical correlatives of these problems were important. To work out all of the aspects of the sampling problem in the selection of radio materials for such a study as this would have been, however, a separate investigation in itself.

On the basis of universality, network broadcasts were selected. It was decided that for practical purposes programs broadcast on one network of the four we have in this country differ very little from those broadcast on another. Hence, merely by chance, the National Broadcasting Company was selected. Through the courtesy of the manager of the script division, arrangements were made to secure the necessary scripts. It was determined that all of the broadcasts made in single days would be used. On a purely random basis three days in December, 1942—a Tuesday, a Thursday, and a Sunday—were chosen. Over one hundred different scripts were included in the three days of broadcasting, and within this material were all of the different types of programs which go on the air. The material lived up to the criteria set down for universality, proper proportion of types, and practicability, and thus was assumed to be an acceptable sample.

The basic method of the study was a simple compilation and listing of all of

the words found in all of the scripts. All nouns were separated into singular and plural numbers, all verbs entered in the tense used, and all other variations of words accounted for. In addition to this, homographs, being in reality different words, were treated as such. All slang, contractions, abbreviations, and colloquial speech were listed. This gave greater accuracy to the study than would have been the case if the forms had not been listed separately. However, as this was not a semantic study, no effort was made to separate the different meanings of a word.

A frequency figure, the number of times the word occurs, was tabulated for each different word in each script, and a total frequncy figure determined from that data. Also a range figure, the number of different scripts in which the word appeared, was calculated. As all other important frequency word studies, such as Horn[13] and Thorndike,[14] recognized both frequency and range in compiling the word list, both factors were examined here. However, it was not assumed at the outset that they were independent factors, as all studies except that of Vander Beke[15] had done. A correlation was run between frequency and range; if they were found to be independent, both would then be used in compiling the final list. All of the different words were listed in alphabetical order with both the frequency and the range figure indicated.

On the basis of the list several operations were completed to find the meaning of the material. First, an analysis was made of the words common to all of the materials examined. At the same time some indication of the nature of the most frequent words was considered valuable; such things as grammatical nature and function, etc. were analyzed. From this the study proceeded to an analysis of the types of words found on the various levels. This study was based on grammatical usage; thus, the most common parts of speech were discovered. Another check was on the differences between types of programs. It was comparatively simple to classify the programs into the general level of the vocabulary of each group. The significance of the percentages of common words could be calculated and further check made on the reality of any differences between the various types of programs. As the Thorndike list is the best existing and most commonly used yard-stick for word studies, it was used here as a basis of comparison. Whatever differences or likenesses were found between the present list and Thorndike's could be interpreted as differences in the materials used in the two studies. Something of the comparative level of the two lists could, thus, be shown.

Final check was then made on the reliability of the list. These calculations were made by splitting the data on the words into halves, thirds, and quarters, and by running correlations. Finally, these results were worked together into a summary and conclusions drawn from them, as well as suggestions made for further study.

The Word List

In the materials examined 227,269 running words were present with 5,719 different words. The range varied from 208 to 1. The correlation between range and frequency was found to be $\pm.89 \pm.0019$. This correlation was high enough to demonstrate that the factors

[13] Horn, E., *A Basic Writing Vocabulary* (University of Iowa, 1926).

[14] Thorndike, E. L., *A Teachers' Word Book of 20,000 Words* (New York, 1931).

[15] Vander Beke, G. E., *French Word Book* (University of Wisconsin, 1924).

of range and frequency are not independent but operate in the same way. Hence, the frequency of the word was used to determine its place and rank in the listing. It was found that the first four thousand different words of greatest frequency divided into thousand groups. At the same time, the thousand words of greatest frequency divided naturally into groups of one hundred words each. The thousand of second greatest frequency could not be broken down beyond two groups of five hundred words each. The third and fourth thousands could not be divided, nor could the last group of 1,719 words of the least frequency. The frequency varied from one word with a frequency of 7,561 down to 611 words with a frequency of one. In listing the words, first, the grammatical usage of each word was indicated by symbol; second, the frequency was given; third, the range; fourth, the index number for the word showing its placement into hundred and thousand word groups in this list; and last was given the index number for the word in the Thorndike list.

Results and Analysis

In the 129 scripts and their commercials which were counted there were 227,269 running words with 5,719 different words. Dividing the number of running words by the number of different words, a ratio of 39.7 was obtained; this means that there is one new word in every 39.7 running words. The average ratio for nine other representative studies done on a similar basis is 49.2. The ratio found in the present study is close to the mean for all of the studies reviewed, varying from it by only 9.5 points.

The programs included in the count were classified as to type into ten divisions: serial drama, music programs, dramatic programs, educational-talk programs, sports programs, comedy-variety programs, news broadcasts, religious programs, commercial announcements, and a miscellaneous group which could not be grouped with any of the others and which were single examples of their types. The data for the types are given in Table I.

In the percentage of programs the serial drama, music, and news program made up seventy-five per cent of the number of different scripts. When percentages of running words were compared, over sixty-five per cent of the words came from serial drama, comedy-variety, news programs, and commercial announcements. As the program of greatest length, measured in running words, should be the most important in its effect on the listening public, this second method of comparison is the more valid. The serial drama becomes the most important type along with the commercial announcement, which is close to it in percentage of running words. Difficulty is encountered in trying to analyze the importance of the music program by the number of running words. One cannot measure music in terms of words, and so this criterion of measurement fails. It is interesting to note that using any of the criteria the serial drama stands in first place. It seems safe to assume that it holds the most important place in the sample of materials. By using all of the data available it would seem that serial drama should rank first in importance; music should rank second; news and comedy-variety programs are third; and the other types relatively unimportant as they total less than twenty-five per cent of the whole on any basis of comparison. It is relatively impossible to gauge the position of the commercial an-

TABLE I

TYPES OF PROGRAMS

Type	Number	Percentage of Total Number	Time on the Air in Minutes	Percentage of Total Time on the Air	Number of Running Words	Percentage of Running Words	Number of Different Words	Percentage of Different Words	Ratio of Running to Different Words
Serial drama	47	36.4%	720	28.8%	44,205	19.4%	834	14.5%	53.0
Music	26	20.1%	555	22.2%	19,164	8.4%	923	16.1%	20.7
Drama	4	3.1%	120	4.8%	13,101	5.7%	832	14.5%	15.7
Ed.—talk	8	6.2%	165	6.6%	18,410	8.1%	1107	19.3%	16.6
Sports	3	2.3%	45	1.8%	6,013	2.6%	660	11.5%	9.1
Comedy-variety	10	7.7%	330	13.2%	28,613	12.5%	518	9.0%	55.2
News	23	17.8%	320	12.8%	37,505	16.5%	1582	27.6%	23.7
Religious	2	1.5%	60	2.4%	6,767	2.9%	239	4.1%	28.2
Commercial	79	——	—	——	41,491	18.2%	622	10.8%	66.7
Unclassified	6	4.6%	180	7.2%	12,000	5.2%	677	11.8%	17.7
Totals	208	100%	2495	100%	227,269	100%	——	——	—

nouncement, except to say, that on the basis of the number of words used, it ranks at the top and coequal to serial drama.

The news broadcast includes more different words than any other type. It includes over twenty-five per cent of all of the different words found in the study, and has 8.3% more of them than any other group of scripts. The educational-talk program is second with 19.3% of the different words, and the music broadcast third with 16.1%. The three types mentioned above have the largest vocabularies in comparison with the other groups. Serial drama and drama have the same percentage of different words, 14.5%, while the comedy-variety program is the lowest with 9.0%.

The serial drama and comedy-variety programs and commercial announcements have the high ratios of 53.0, 55.2, and 66.7 of running to different words respectively. Music and drama have ratios of 20.7 and 15.7; news and religious programs are slightly higher at 23.7 and 28.2. The lower this ratio the more different words there are in comparison to running words, and, hence, the larger the vocabulary in a given number of running words. The vocabularies of serial drama, comedy-variety programs, and commercial announcements, as expressed by the ratio, are low, and those of the others, larger.

Of the first one hundred words in the present list, all but eighteen appear in the Thorndike list of 135 common words. Two of these eighteen are not infinitives of the verb, eight are contractions, three are paired words which appear twice in different grammatical forms in the list. So, in reality, there are seventy-nine words which are common to both lists. All but eight of the one hundred most frequent words in the present list are in the five hundred most frequent words of the Thorndike list. Of these eight, seven are contractions and the eighth a noun. Considering that there appears to be some confusion as to how Thorndike counted contractions, the variations are slight from list to list. Only fourteen words in the present list have a range figure of 208 which indicates that they were present in every script and every commercial. Those

words are: "the," "to," "and," "a," "you," "of," "in," "for," "that," "is," "that," "this," "with," and "are." "That" is listed both as an adjective and as a pronoun and so appears twice. Two of these words are articles; five are prepositions; one, a conjunction; three, pronouns; one, an adjective; and two, verbs. This list of common words corresponds very closely with the common words noted in other similar studies.

An analysis of the parts of speech was undertaken as the next step. Nouns and verbs have a prominent place in the number of different words; over seventy-five per cent of the different words are nouns and verbs. Those two groups along with adjectives account for ninety per cent of the different words. In number and percentage of running words the story is slightly different. Nouns and verbs, especially nouns, lose some of the importance which the first basis of comparison gave to them. Adjectives drop slightly in importance in relation to other parts of speech. The most striking change is the increase in the importance of pronouns. They include only 1.2% of the different words, while they comprise 13.0% of the running words. In the same way, prepositions, conjunctions, articles, adverbs, and contractions gain in importance. The noun and the verb are still the most frequent by almost twice the total of any other part of speech. The change in relative importance of all of the parts of speech is the interesting one.

Articles, of which there are only three in the list, make up 5.7% of all of the running words. On the other hand, nouns, which make up 46.4% (2,656, of the different words) represent only 21.9% of the running words. It is this frequent use of a few words which is important. Nouns and verbs, which are over seventy-five per cent of the different words, include only forty-four per cent of the running words. Contrarywise, prepositions, conjunctions, articles, contractions, interjections, and pronouns total but four per cent of the different words, and yet include thirty-seven per cent of the running words. One can see from this how the frequent repetition of a few words accounts for a large part of the running words. That these words should be the parts of speech which they are, the common connectives, etc., is also noteworthy: it demonstrates that a large part of the writing is built of words which do not express the meanings and ideas, but which help along the meanings expressed by the verbs, nouns, and adjectives. As over sixty-five per cent of the running words are nouns, verbs, adjectives, and pronouns, one can say that they appear to be the most important groups of words in terms of "total" usage.

An analysis of the parts of speech leads to the general conclusion that the most frequent parts of speech, both in different and running words, are the conjunctions, articles, prepositions, and pronouns. That is, those parts of speech have a higher percentage of both different and running words in the thousand-most-frequent words in the distribution scale, than do the nouns, verbs, and adjectives. The distribution of the adverbs, interjections, and contractions in the thousand words of greatest frequency does not allow for any general conclusion. It is evident that a relatively few different conjunctions, articles, prepositions, and pronouns make up the bulk of the most frequent words. This bears out what other researchers in the field have found.

In the study of the detailed distribution of the words by program types, the

first observation to be made is the high percentage of running words in each type which come from the one hundred words of greatest frequency. Except in the case of the sports program, over thirty per cent of the running words in each type comes from this group. The comparison of the percentages of different words throughout the distribution does not reveal the same facts, however. At the upper end of the distribution, in the first thousand different words, the serial drama, and comedy-variety shows, and the commercial announcement have higher percentages of different words than do the music, drama, educational-talk, sports, religious, and news broadcasts. From the group of 1,719 words of least frequency, the music, drama, educational-talks, and news broadcasts have a relatively high percentage of different words. This difference in different words at the two ends of the distribution scale for the various types of programs indicates that the serial drama, comedy-variety programs, and commercial announcements use more words which are repeated many times than do the music, drama, educational-talk, and news broadcasts. This confirms the conclusion that the latter four types of programs have larger vocabularies than the former three.

In an analysis of the parts of speech in relation to the program types, the following general conclusions can be drawn. Nouns are the most common words in all types of programs on the basis of different words, except for the comedy-variety broadcast, where adjectives are more prominent. In the per cent of running words the noun is the most common in the serial drama, comedy-variety programs, and commercial announcements. For the music, educational-talks, sports, and news programs the percentage of verbs to running words is the largest. The percentage of pronouns to running words is highest in the drama and religious broadcasts. All types are comparatively low in percentage of different prepositions, conjunctions, articles, adverbs, interjections, and contractions. The different adjectives play a considerable part among the different words used in all types. The bulk of the running words in all types are nouns, verbs, adjectives, pronouns, and prepositions in approximately that order of importance. There are individual variations within the types, but this is the general trend.

The words in the list were reclassified and arranged on the basis on which Thorndike[16] made up his list. All forms of the verb were placed under the infinitive, all forms of the noun under the singular, etc. This new list included 4,235 different words. Of these words, three hundred were not to be found in any form in the Torndike list and were set aside. The list which was compared with the Thorndike scale had 3,935 different words. These words were regrouped into frequency order and divided into groups of five hundred words as Thorndike did with the first 5,000 words in his list. A correlation of $+.69 \pm .0056$ was found between the Thorndike list and the present revised one. This figure is high enough to indicate a substantial relationship between the placement of the words in the two lists. It demonstrates that in the samples used in the two pieces of research the frequency of the words, which in general determined the place order in both lists, was relatively the same. The most frequent words were most frequent in both lists,

[16] See Thorndike, *A Teachers' Word Book of 20,000 Words*, pp. iv and v for Thorndike's method of compiling the list.

TABLE II

RELIABILITY OF MATERIAL

Correlation between:	Reliability of third:	Reliability of whole:
First and second third	+.74 ±.009	+.89 ±.007
First and third third	+.61 ±.013	+.81 ±.012
Second and third third	+.47 ±.016	+.72 ±.026

TABLE III

RELIABILITY OF MATERIAL

Correlation between:	Reliability of third:	Reliability of whole:
December 3 and December 6	+.61 ±.013	+.81 ±.012
December 1 and December 3	+.76 ±.009	+.90 ±.005
December 1 and December 6	+.51 ±.015	+.78 ±.02

and the least frequent words were least frequent in both. While the relationship is by no means a perfect one, it is high enough in relation to the size of the sample used in the present study to be indicative of more than a casual trend.

Sixty-nine and six-tenths per cent of all the words in the present study found in the Thorndike list occur in his 5,000 most frequent words; 88.7% appear in the 10,000 most frequent; and 96.5% in the 15,000 most frequent words. This lends significance to the conclusion that the vocabulary as expressed in the present list is low in terms of the Thorndike scale. The three hundred words in the present list which were not in Thorndike's are mainly words of high current usage, slang, and contractions; this would account for their absence in his list.

As a check on the reliability of the materials in the study, correlations were run on the frequencies of split halves and thirds of the 1,000 words of greatest frequency. The words were split arbitrarily on the basis of programs. Two new figures of frequency were worked out for each word in the thousand of greatest frequency. The correlation between these two halves was +.59 ±.013. By the Spearman-Brown formula the coefficient of reliability for all of the material was +.74 ±.017, which is marked enough to indicate a high reliability for the material. In the same way the material was split into thirds and correlations run between the 1,000 words of greatest frequency. The results of these correlations are shown in Table II. The same type of correlation was made between the 1,000 words of greatest frequency in the three different days from which the sample of material was taken. These correlations are shown in Table III. These correlations show that there is a high degree of realibility in the material as measured by this method.

Using the Spearman-Brown formula[17] for the effect upon reliability of increasing the size of the sample, the effect of doubling or tripling the amount of material in the sample was determined, based on the correlations made above. If the formula is applied to the figure for the split half correlation, the reliability of double the amount of material in the present sample would be +.84 ±.006. By the same method, the effect of tripling the amount of material

[17] Garrett, H. E., *Statistics in Psychology and Education* (New York, 1941), pp. 315-316.

would be to increase the reliability to +.89 ±.004. The formula was also used to determine the increase in the amount of material necessary to give a certain predetermined coefficient of reliability. If a coefficient of reliability of +.90 is desired, then there must be three times as much material as at present. If the coefficient is to be increased to +.95, then six times as much material must be used. These demonstrate the high degree of reliability for the sample used in the present study and show the amounts of material which will have to be used in future studies if higher reliability coefficients are desired.

Conclusions

1. In the present study the method used for selecting materials and the materials themselves appear to be highly satisfactory. A careful examination of the materials included in the sample reveals that they are surprisingly representative of what goes on the air.

2. The correlation of frequency and range to determine the *modus operandi* for assembling the word list demonstrates that both range and frequency need not be taken into account in arranging the words in the list if the materials are homogeneous. In the same way, the other major departure in method, the inclusion of every form of every word exactly as it appeared in the materials, seems to be vindicated. The different placements and frequencies for homographs in the present list justifies the use of the plan.

3. The various types of programs do differ in vocabulary. (a) The serial drama and comedy-variety programs and the commercial announcements have smaller vocabularies as expressed in the ratio of running to different words than do the music, drama, educational-talks, and news broadcasts. (b) Music, drama, educational-talks, and news broadcasts have a vocabulary which differs from the other types in that they include more different words which are used but a relatively few times each. It is safe to assume that the more different words of low frequency used and the more different words used, the larger and more complex the vocabulary level of the material. Thus, the music, drama, educational-talks, and news programs have larger and more complex vocabularies than the serial drama, comedy-variety programs, and commercial announcements. (c) The music, drama, educational-talks, and news broadcasts use higher proportions of the meaningful words—nouns, verbs, and adjectives—than do the other types of programs; the serial drama, comedy-variety programs, and commercial announcements use fewer different words and repeat those words over and over many times. This latter group uses higher relative proportions of the less important connectives and the like than does the former group. This would tend to demonstrate that the meanings and exact ideas were more carefully expressed in the music, drama, educational-talks, and news broadcasts.

4. The words of greatest frequency are conjunctions, prepositions, articles, and adverbs. This confirms the findings of other researchers who have discovered that the function words are the most common ones in terms of frequency of occurrence. There are comparatively few different nouns, verbs, and adjectives among the high frequency items in the list. High percentages of different nouns, verbs, and adjectives appear in the 1,719 words of least frequency. It is impossible from the sample to determine the true relative place of the words in this group. They ap-

pear so infrequently that one cannot be sure whether they are important or not. As they are the most important items for meaning, and as the high frequency of the function words seems quite well established, research on a wide range of materials should be made on the nouns, adjectives, and verbs in order to establish more definitely their true frequency positions.

5. The comparisons of the present list with the Thorndike list provide a satisfactory method of establishing levels. Two conclusions are available from the comparisons made between them. (a) The correlation between the placement of the words in the two lists indicates that there is a high degree of agreement in the frequency placement of the different words in the two. There is fairly close agreement as to the different words used. However, there are three hundred words in the present study which did not occur in Thorndike's list. Since this is only 7.0% of the words in this list as revised to fit the Thorndike list, the correspondence between the two, both on this basis and the correlation, is high enough so that it can be said that there is a substantial relationship between them. (b) The placement of the words in the present study in the distribution of the Thorndike list suggests rather positively that the vocabulary of the sample used in this study is low in comparison to the vocabulary of the sample used by Thorndike. There is a high representation of the words from the most frequent thousand in the Thorndike list and a very marked and steady decrease in the number of words from each of the next thousand of lesser frequency up through the 20,000 of least frequency. This suggests that if the radio writer is to use the Thorndike list as a check-list for writing, he should beware of words above the 10,000 word level, as only twelve per cent of the words in the present list are from above that level.

6. The correlations to establish reliability demonstrate a high degree of homogeneity for the sample of radio material. The application of the prediction formula shows that if the amount of material were doubled or tripled a very high coefficient of reliability would be attained. At the same time, there should be quite high correlation between the present sample and any other general radio sample chosen.

Suggestions for Further Study

1. Further study of the same type should be carried on using more varied radio sources.

2. Further detailed comparison should be made with Thorndike's list.

3. Profitable research could be made in the grammatical usage of radio writing.

4. A study could be made of radio materials exactly as they are delivered on the air.

A STUDY OF SOME FACTORS RELATED TO CONVERSATIONAL ABILITY*

EUGENE T. McDONALD
The Pennsylvania State College

A NUMBER of books have been written in a popular manner describing techniques for improving conversational ability. For the most part, these books have been written by literary-minded authors and are not based on research studies of conversation. Oliver[1] has compiled a bibliography which lists approximately 250 titles, only a few of which are experimental in nature. A few investigators have observed and recorded conversations; however, most of them have been interested in understanding some other feature of human behavior and have studied conversations only as a means of collecting data. For example, Sleeper[2] sampled leisure-time conversations to find sex differences in drives.

It appears that trained speech teachers and investigators have neglected the conversational aspect of our speech life. As Oliver[3] points out, "This is a large field of speech activity whose considerable importance should rescue it from its present pedagogical neglect."

The present study investigated some possible correlates of conversational ability in an attempt to identify some characteristics in which good and poor conversationalists differ.

PROCEDURE

The investigator prepared a talk on conversation which was given before representative college groups, such as fraternities, sororities, cooperative houses, independent houses, and dormitory groups. The members of each group had a conversational acquaintance with all the members of their own group. The talk dealt with the values of conversation, some common conversational problems and how to overcome them, and was concluded with a description of some characteristics of a good conversationalist. This description, based on those characteristics which are listed in books on etiquette, speech texts, and popular writings on conversation, emphasized the difference between a good "talker" and a good conversationalist by pointing out that a good conversationalist is always interested in others' contributions to the conversation.

Following this talk the members of each group were asked to list from their membership the names of several good and several poor conversationalists. The list of names submitted by a total of 386 persons yielded 68 good and 51 poor conversationalists when the following criterion was applied: To be placed in either group, a student's name had to be mentioned an algebraic sum of at least three times in that group. For example, if a student were listed eight times as a good conversationalist, and five times as a poor conversationalist, he was considered a good conversationalist. In most cases the algebraic sum was more than the arbitrarily chosen "three," the average being 6.3.

A letter was sent to each of the good

*From a doctoral dissertation, Department of Education and Psychology, The Pennsylvania State College, August, 1942.

[1] Oliver, Robert T., "A Working Bibliography on Conversation," QJS, XX (1934), 524-535.

[2] Unpublished: quoted in Murphy, Gardner and Murphy, Lois Barclay, *Experimental Social Psychology* (New York, 1931), pp. 502-503.

[3] *Op. cit.*, p. 525.

and poor conversationalists asking him to take several tests in return for which he would, in a private conference, be told how his friends rated him as a conversationalist, be given a profile of his test results and some suggestions for improving himself as a conversationalist. Forty-four good and 34 poor conversationalists agreed to take the tests. Of the good, 15 were women and 29 were men; and of the poor, 12 were women and 22 were men.

Study of books on etiquette, articles in popular magazines, and both professional and popular books on speech, revealed a large number of possible correlates of conversational ability. Two considerations limited the choice of traits to be studied. First, satisfactory methods are not yet available for the measurement of many of the suggested correlates, e.g., tact, ready wit, originality. Second, to obtain student cooperation, the investigator felt that no more than four hours of the student's time should be required for the testing; consequently, the number of characteristics which could be studied was limited. Many characteristics, e.g., attitudes, which might be closely related to conversational ability, were not included in this study because of the limitations of time.

The following capacities, traits, and skills were selected for measurement and correlation with conversational ability: intelligence, knowledge of etiquette, general information, personality traits, voice quality, articulation, pronunciation, vocabulary, use of English, and social aptitude. Each subject was also requested to rate himself as either a good or a poor conversationalist.

In this study of the relationship between certain measurable characteristics and conversational ability it was deemed economical to deal with only the extremes of the distribution of conversational ability. The ordinary biserial correlation method was not applicable in this situation since it demands the presence of whole distributions. The investigator used the method developed by Peters and Van Voorhis[4] for calculating biserial r from widespread classes.

Results

The subjects were asked to rate themselves as either good or poor conversationalists. Of those who were rated "good" by their associates, 84.2 per cent placed themselves in this category, and of those who were rated "poor" by their associates, 75.8 per cent placed themselves in this category. The tetrachoric correlation[5] between associates' ratings and self-ratings of conversational ability was +.814.

Intelligence was measured by the Otis Self-Administering Test of Mental Ability, Higher Examination, Form A. The biserial correlation between this measure of intelligence and conversational ability was found to be +.079.[6] This low, positive correlation indicates that this relationship is negligible. It should be noted that the operation of certain selective factors and differences in training tends to make college groups differ from the general population in many respects. For example, it is obvious that the range of intelligence test scores would be smaller for college groups than for the general population. This narrowing of the range of abilities tends to produce lower correlations. Since this study was carried out with a college population, the relationships herein report-

[4] Peters, C. C. and Van Voorhis, W. R., *Statistical Procedures and Their Mathematical Bases*, (1940), pp. 384-391.

[5] Cos. π formula; see *ibid.*, p. 370.

[6] The standard error ratio for each correlation is given in Table III.

ed would not necessarily hold for the general population.

Knowledge of etiquette was measured by an 80-point objective test devised by the writer. This test constituted a measure of the subjects' familiarity with the rules of etiquette rather than a measure of the extent to which they applied these rules. However, it was reasoned that the person who knows many rules would be more likely to "do the right thing" than the person who knows only a few rules. The biserial correlation between this characteristic and conversational ability was only +.022, indicating that there is practically no relationship between knowledge of the rules of etiquette and conversational ability as they were measured in this study.

General information was measured by a 105-point, objective test composed of items selected from a test of general information constructed by C. C. Peters of The Pennsylvania State College, and from the Current Affairs Test published by *Time,* the weekly news magazine. This measure included items in the fields of music, science, literature, history, art, theology, sports, and current events. With the criterion of conversational ability, scores on this test correlated biserially +.159. Although this correlation meets the conventional standards of statistical significance, it indicates only negligible relationship between general information and conversational ability as they were measured in this study.

Selected personality traits were measured by the Bernreuter Personality Inventory. With the criterion of conversational ability, these traits correlated as follows:

TABLE 1

BISERIAL CORRELATIONS BETWEEN PERSONALITY TRAITS AS MEASURED BY THE BERNREUTER PERSONALITY INVENTORY AND CONVERSATIONAL ABILITY

Personality Trait	r_{bis}
Dominance	+.273
Emotional Stability	+.256
Self-sufficiency	+.098

Pleasantness of voice was rated on a three-point scale devised by the author. Four judges, each of whom had previous rating experience and was trained in speech, simultaneously rated the subjects who read a selection from *The Reader's Digest* which permitted the use of a variety of voice skills. Each subject read the selection to himself before reading it to the raters. Product-moment intercorrelations were computed for each judge with every other judge. The reliability of these ratings was computed by averaging the six intercorrelations. This average intercorrelation as corrected by the Spearman prophecy formula was +.753. The voice score for each subject consisted of the total of the judges' ratings of his performance. Pleasantness of voice as measured by this method yielded a biserial correlation of +.252 with conversational ability. The standard error ratio of this r, 4.67, indicates high statistical reliability; however, the coefficient of correlation indicates only slight relationship between pleasantness of voice and the criterion.

Distinctness of articulation was rated on a three-point scale. The judges were instructed to evaluate the articulation of the subject, in addition to his vocal characteristics, while he read the selection mentioned above. Again product-moment intercorrelations were computed for each judge with every other judge. The reliability of these ratings computed as for the voice ratings was

+.888. The articulation score for each subject was obtained by combining the judges' ratings of his articulatory proficiency. The biserial correlation between these combined ratings of proficiency in articulation and conversational ability was found to be +.185. While statistically reliable, it denotes only indifferent relationship between this trait and conversational ability.

Skill in pronunciation was measured by a 50-word test devised by the author. From a list of seventy-five "usable" words for which *Webster's Collegiate Dictionary* lists but one acceptable pronunciation, five teachers of public speaking selected the fifty words that would be most likely to occur in collegiate conversation. Each subject was permitted to read through the list (without a dictionary) before pronouncing the words for the same judges who rated voice and articulation. The judges were provided with a record blank for each subject in the form of a diacritical key and had familiarized themselves with the pronunciation of each word before scoring the subject's pronunciation of the words. The reliability of this measure was computed as for the voice ratings and was found to be +.944. A pronunciation score for each subject was obtained by totaling the correct responses indicated on all four record blanks. The biserial correlation between ability to pronounce words as measured by this method and conversational ability was only +.079.

Vocabulary was measured by the vocabulary section of the "Nelson-Denny Reading Test, Form A, For Colleges and Senior High Schools." The biserial correlation between scores on this test and conversational ability was +.030. This relationship is negligible.

English usage was measured by two parts of the "Barret-Ryan-Schrammel English Test, Form Am; For Grades 9 to 12 and College." Part I required the subjects to decide whether or not an expression is correctly used and correctly placed in a paragraph. Part II requires the subject to decide on the correctness of certain grammatical forms and then indicate the explanation of his choice. English usage as measured by this test correlated biserially only +.074 with conversational ability.

Social aptitude was measured by the Social Intelligence Test, Revised Form, First Edition of Moss, Hunt, and Omwake. The biserial correlation between total scores on the test and conversational ability was found to be only +.096.

Logically each of the traits measured by the several parts of this test would be expected to correlate with conversational ability; therefore, each part was studied individually.

Judgment in social situations was measured by requiring the subject to select the best course of action in a briefly-outlined social situation. Recognition of the mental state of a speaker was measured by requiring the subject to attach the appropriate emotional term to a brief quotation. The extent and accuracy of the subject's observations of human behavior were measured by requesting him to judge the truth or falsity of a number of statements about human behavior. Memory for names and faces was tested by permitting the subject to study for four minutes, twelve faces, each of which was associated with a name. Later they were required to select from twenty-five faces the ones they had studied earlier, and to indicate their recognition of the twelve faces by assigning to them the correct names. Sense of humor was measured by having the subjects select

the best of four possible endings for uncompleted jokes.

The biserial correlations between these parts of the Social Aptitude Test and conversational ability are shown in Table II.

TABLE II

BISERIAL CORRELATIONS BETWEEN PARTS OF THE SOCIAL INTELLIGENCE TEST AND CONVERSATIONAL ABILITY

Test part	r_{bis}
Judgments in social situations	+.017
Recognition of mental state of speakers	+.071
Observation of human behavior	+.029
Memory for names and faces	+.083
Sense of humor	+.142

SUMMARY

A talk dealing with the values and common problems of conversation and with some desirable characteristics of good conversationalists was given before fraternity, sorority, cooperative, dormitory, and independent groups, following which the members of the audiences were asked to list the names of several good and several poor conversationalists from their own group. From these listings, submitted by 386 college students, a group of 44 good and 34 poor conversationalists was obtained as subjects for this study.

Before they were told how their associates had rated them, the subjects rated themselves as either good or poor conversationalists. The tetrachoric correlation between associates' ratings and self-ratings was +.814.

Several traits, skills, and abilities were measured and correlated with conversational ability. The results are summarized in Table III.

TABLE III

BISERIAL CORRELATIONS WITH THEIR STANDARD ERROR RATIO BETWEEN STUDIED CHARACTERISTICS AND CONVERSATIONAL ABILITY*

	r_{bis}	Standard Error ratio
Intelligence	.079	1.32
Knowledge of etiquette	.022	.36
General information	.159	2.74
Personality		
Self-sufficiency	.098	1.63
Dominance	.273	5.15
Stability	.256	4.74
Voice	.252	4.67
Articulation	.185	3.25
Pronunciation	.079	1.32
English usage	.074	1.25
Vocabulary	.030	.50
Social intelligence	.096	1.60
Judgment in social situations	.017	.28
Recognition of speaker's mental state	.071	1.18
Observation of human behavior	.029	.50
Memory for names and faces	.083	1.38
Sense of humor	.142	2.41

*All correlations are positive

GENERAL CONCLUSIONS

1. There is a high degree of agreement between self-ratings and associates' ratings of conversational ability, suggesting that most college students can accurately evaluate their conversational ability.

2. Of the seventeen characteristics studied, eleven were found to have only negligible and statistically unreliable relationship to conversational ability. The correlations between three characteristics (dominance, emotional stability, and pleasantness of voice) and conversational ability indicated only slight relationships. These three correlations are of high statistical significance. The correlations of general information, clearness of articulation, and sense of humor with the criterion indicated only indifferent relationships. However, these correlations meet the conventional standards of statistical reliability. These low correlations may, in part, be due to the narrow range of abilities resulting from the selection and training of college students.

3. Good and poor conversationalists do not differ much in the characteristics studied in this research. However, the good conversationalists tend to be more dominant, to be more emotionally stable, and to have more pleasant voices than the poor conversationalists. To a lesser degree the good conversationalists tend to exceed the poor in clearness of articulation, general information, and sense of humor.

4. Since the subjects used in this study were drawn from a college population, the relationships herein described would not necessarily hold for the general population.

5. Further research should be conducted to determine the relationships between other important personal characteristics, e.g., attitudes, ability to listen intelligently, tact, etc., and conversational ability.

AN EXPERIMENTAL STUDY OF THE RELATIVE EFFECTIVENESS OF CERTAIN FORMS OF EMPHASIS IN PUBLIC SPEAKING

RAY EHRENSBERGER*
University of Maryland

Introduction

WITH the call for public speakers constantly increasing, due undoubtedly to the tremendous influence of the radio, speech-making today has a greater opportunity than ever before. It is unfortunate that the quest for a scientific approach to public speaking is very limited. Probably in no other academic subject is the method of teaching so unblemished by scientific data.

This is true especially of an experimentally conducted psychological approach. "The story of our psychological research during the past twenty years is not one of impressive accomplishment."[1] We know that the conclusions established in the behaviorist's and Gestaltist's laboratory have provided permanent contributions to scientific knowledge. When such conclusions are applicable to the speech arts, we may do well to adopt them. "There is no object in borrowing the psychologist's theoretical scaffolding unless we wish to use it as the psychologist himself uses it—as a basis for experimentation."[2]

To condemn the entire speech profession as being unscientific and non-progressive would be unfair, since there have been several outstanding contributions. However, Hollingworth[3] merely supports the accusation that our experimental evidence is not as impressive as it might be. He attempts to collect all of the data and experiments that have been conducted to date in a broad area squarely located in the field of speech. A few exceptional experiments stand out in bold relief against a rather mediocre background.

One of the encouraging trends in speech research has been toward the direct application of the psychologist's experimental technique to our speech problems. One cannot overlook the pioneering works of the late Charles H. Woolbert, who has been an inspiration and ideal to all speech teachers who knew him either personally or through his works. Woolbert blazed the trail of an experimental approach in 1918 with his work on "Effects of Various Modes of Public Reading."[4] Two years later Flemming followed with a "Study of Silent Reading in Classes in Speech."[5] Experimental studies by Stevens,[6] Knower,[7] and Norvelle[8] contributed much to the use of rating scales for measuring the effectiveness of public address. Vari-

*An excerpt from a dissertation submitted in partial fulfillment of the degree of Doctor of Philosophy at Syracuse University, 1937.

1 Utterback, W. E., "Psychological Research in Speech," QJS, XXIII (1937), 181.

2 *Ibid.*

3 Hollingworth, H. L., *The Psychology of the Audience*, (New York, 1935.)

4 Woolbert, C. H., "Effects of Various Modes of Public Reading," *Journal of Applied Psycology*, IV (1920), 162-185.

5 Flemming, E. G., "A Study of Silent Reading in Classes in Speech," Quarterly Journal of Speech Education, VI (1920), 31-51.

6 Stevens, W. R., "A Rating Scale for Public Speakers," QJS, XIV (1928), 223-232.

7 Knower, F. H., "A Suggestive Study of Public Speaking Rating Scale Values," QJS, XV (1929), 30-41; 216-222.

8 Norvelle, L., "Development and Application of a Method for Measuring the Effectiveness of Instruction in a Basic Speech Course." SM (1934), 41-66.

ous studies relative to personality factors have been made by Flemming,[9] Hunter,[10] Tracy,[11] and Moore.[12]

Another group of experimental studies, which attempt to measure the effectiveness of various types of public address in terms of audience reaction, has been made by Collins,[13] Woodward,[14] Millson,[15] and Knower.[16]

Current rhetorical theory is based on the outmoded pluralistic psychology of mental faculties. As modern psychology is strongly monistic in nature, three outstanding attempts have been made to restate rhetorical theory in terms of modern psychology.

Woolbert[17] was a pioneer in this field and, in a series of five articles, attacked the tradltional conviction-persuasion dichotomy, attempting to formulate a complete theory of persuasion in behavioristic terms. Utterback[18] outlined a theory of persuasion in terms of functional psychology, and more recently Brigance[19] has set forth a theory of persuasion couched in terms of dynamic psychology, employing desire as his basic concept. All of these works are excellent, but there constantly remains the fact that experimental evidence is lacking and as a substitute highly speculative theories and hypotheses are used.

As a result many teachers approach the teaching of speech from the standpoint of empirical tenets. Comparative reading of speech authorities reveals an astounding contradiction among rules and techniques as set forth for effective speaking. As an illustration, O'Neill and Weaver[20] state: "It is almost impossible to attain great effectiveness as a speaker unless you can learn to use your eyes, literally as well as figuratively. Instead of looking at the floor—look directly into the eyes of those whose behavior you are seeking to control." Antithetically Bautain[21] declares: "For the greatest possible avoidance of distractions—do not contemplate the individuals who compose the audience and thus establish a special understanding with them —carefully avoid all ocular contact with no matter whom."

The achieving of an effective delivery presents one of the greatest problems in speech training. Two definite schools of thought are constantly at variance—the so-called formal or oratorical school who insist that speaking at times

[9] Flemming, E. G., "Expression and Personality," QJS, XVIII (1932), 270-276; "Pleasant Voice," QJS, XX (1934), 194-199.

[10] Hunter, A. D., "A Comparison of Introverted and Extroverted High School Speakers," SM, II (1935), 50-53.

[11] Tracy, J. A., "A Study of Personality Traits of Mature Actors and Mature Speakers," SM, II (1935), 53-56.

[12] Moore, G. E., "Personality Changes Resulting from Training in Speech Fundamentals," SM, II (1935), 56-59.

[13] Collins, G. R., "The Relative Effectiveness of the Condensed and Extended Motive Appeal," QUARTERLY JOURNAL OF SPEECH EDUCATION, X (1924), 221-230.

[14] Woodward, H. S., "Measurement and Analysis of Audience Opinion," QJS, XIV (1928), 94-111.

[15] Millson, W. A. D., "Problems in Measuring Audience Reaction," QJS, XVIII (1932), 621-637; "Audience Reaction to Symposium," QJS, XXI (1935), 43-53.

[16] Knower, F. H., "Experimental Studies of Changes in Attitude," JOURNAL OF SOCIAL PSYCHOLOGY, VI (1935), 315-347.

[17] Woolbert, C. H., "Conviction and Persuasion," QUARTERLY JOURNAL OF PUBLIC SPEAKING, III (1917), 249-264; "The Place of Logic in a System of Persuasion," QUARTERLY JOURNAL OF SPEECH EDUCATION, IV (1918), 19-39; "Persuasion: Principles and Method," QUARTERLY JOURNAL OF SPEECH EDUCATION, V (1919), 12-25; V 101-119; 212-236.

[18] Utterback, W. E., "A Psychological Approach to the Rhetoric of Speech Composition," QUARTERLY JOURNAL OF SPEECH EDUCATION, X (1924), 17-23.

[19] Brigance, W. N., "Can We Re-define the James-Winans Theory of Persuasion?" QJS, XXI (1935), 19-26.

[20] O'Neill, J. M., and Weaver, A. T., *The Elements of Speech*, (New York, 1940), p. 61.

[21] Bautain, L. E., *The Art of Extempore Speaking*, (New York, 1929), p. 261.

should be formal, and the modern or conversational adherents. For instance, Brigance[22] says: "Generally speaking, it may be said that, with a high ceiling and the audience seated some distance from the speaker, a formal mode of speaking and majestic sweeps of oratory will be more effective than plain informal speaking." Just as emphatic is Gislason[23] who says: "It is possible to speak to a thousand people, or even ten thousand people, and be conversational. The problem is to use the right amount of voice the right way, remembering always that the requirements of cultivated conversation should be the guide."

Speaking of what many may think is a very simple aspect of speech, namely, posture, Woolbert[24] states: "The weight should be on one foot only." In fact he goes so far as to list the four possible positions a speaker may assume. It is almost amusing to note that Sarett and Foster[25] say: "There is no one correct way in which to stand—a prescribed posture that draws attention to itself is bad art."

These few cited illustrations give some idea as to the diversity of opinion that prevails. In the so-called physical aspects of public speaking—posture, movement, gesture, vocalization—we can safely say that no two authorities are in complete agreement.

This is even more true when we consider the intellectual—speech composition—aspects. This is due probably to the fact that scientific investigation is very limited and very difficult. In the preparation of a speech how shall we proceed to reach maximum effectiveness before an audience? If we are to be effective we must impress the audience, and impression is closely allied with emphasis. The item that impresses us, in the sense that it attracts our attention, is likely to impress us, in the sense that it is retained in our memory. Psychologists express this fact by saying that vividness adds to memory values, and vividness is a form of emphasis.

In 1928 Jersild[26] conducted an experiment relative to emphasis in speech. Upon this experiment is the only bit of evidence we have to base any conclusions. Jersild approached his experiment from a speech point of view and the conclusions he reached are secondary in importance when we consider the fact that he pioneered in this all-important field of speech training. This lone experiment has indirectly provided the impetus for the present study.

Outside the field of speech several studies have been made in a closely allied field—that of determining the comparative value of material presented verbally and of material presented visually to an audience. In some twenty-three experiments studied by the author it was found that the conclusions reached were very conflicting. Regardless of the question of which is superior, material presented verbally or material presented visually, and readily admitting the distinct advantage of visual aids in public speaking, we must admit that the average speaker does not have these aids at his disposal. This is even more true of the radio speaker (until television becomes a reality) who must rely solely on his manuscript and voice.

Therefore this project is not concern-

[22] Brigance, W. N., *Speech Composition*, (New York, 1937), p. 152.

[23] Gislason, H. B., *The Art of Effective Speaking*, (New York, 1934), pp. 12-13.

[24] Woolbert, C. H., *The Fundamentals of Speech*, (New York, 1934), p. 114.

[25] Sarett, L., and Foster, W. T., *Basic Principles of Speech*, (Boston, 1936), p. 162.

[26] Jersild, A., "Primacy, Recency, Frequency, and Vividness," *Journal of Experimental Psychology*, XLI (1929), 58-70.

ed with the highly specialized platform lecturer who can resort to all the tricks of the trade in order to motivate an audience, but rather with the ordinary speaker who, restricted by limited facilities, has a message to deliver to a particular audience and who hopes to be successful in his particular mission.

Statement of Problem

The public speaker is confronted with two factors: the composition of the speech and the delivery of the speech. In preparing a speech the speaker is aware of certain important statements or facts with which he wishes to impress the audience. In other words he would like to have the audience remember or retain certain pertinent data. The question now arises: Where shall he place these data in the discourse so that greater retention shall be realized? Just where and how should statements be placed in order to facilitate retention? What point in a discourse is the more important or impressive—the beginning of a speech, the middle, or the end? What is the effect of repeating a statement one or more times at various intervals throughout the speech, and how can this repetition be accomplished to yield the best result? What is the effect of repeating a statement immediately?

In addition to the rhetorical mechanics of constructing a speech how can one alter one's delivery in order to increase audience retention? Shall the speaker use a loud voice, shall he pause impressively before making a remark, shall he use a gesture, in other words, what is the value of using these various modes of emphasis that public speakers are prone to employ?

It is the specific purpose of this experiment to record and compare the following devices of emphasis which ordinarily are used in public speaking, and to determine what differences are real, and what differences are due to chance:

1. The use of a forceful voice (semi-bombastic)
2. The use of a soft voice (aspirate)
3. The pause
4. The gesture (simple gesture with hand index, or pointing with the first finger)
5. Speaking slowly (articulation retarded to half the normal rate)
6. Verbal emphasis ("Now get this" etc. preceding a remark)
7. The use of repetition:
   a. Four repetitions, distributed at various intervals throughout the discourse
   b. Three distributed repetitions
   c. Two distributed repetitions
   d. Immediate repetition, in the early part of the discourse
   e. Immediate repetition, in the latter part of the discourse
8. Primacy, the early part of the discourse. A group of statements (five) that appear within the first ten statements of the discourse.
9. Recency, the latter part of the discourse. A group of statements (five) that appear within the last ten statements of the discourse.
10. Middle, a group of statements (five) that fall within Primacy and Recency.
    In a comparison between Primacy, Recency, and Middle, the statements used must not appear in any experimental position.
11. The relation and value between the various positions, and the relation and value between the various modes of emphasis.

Treatment of Problem

In attempting to undertake a project of this sort one must proceed with a great deal of caution. Public speaking is concerned with so many factors—the type of audiences, the personality and appearance of the speaker, the acoustical properties of the rooms, the nature of the discourse, etc.—which do not lend themselves very readily to scientific analysis.

The present experiment has attempted, as nearly as possible, to control these many variables present when dealing with a problem of this nature, and in

so doing to employ the accepted principles of scientific procedure.

In order to measure audience retention it was necessary to secure audiences. One could not measure the average audience because of the great range of interests, intellectual differences, etc. It was decided early in the experiment that it would be practicable to measure college groups where percentile ratings, based upon psychological examinations, could be secured. All of the experiments have been carried on before college classes. By following this procedure it was possible to match audiences approximately according to percentile rank. This would have been impossible, because of lack of data, had any other audiences been used. The average size of the audiences tested ranged from thirty-two to thirty-five. There were exceptions, of course, where the audiences were larger, and two exceptions where the classes were very small. Because of the size limitation of the average college class it was found to be feasible to select twenty papers from each group to treat statistically. The selection was based upon a categorical division of percentile ranks approximating a normal curve for the purpose of insuring a fairly normal distribution, so that statistical procedure contingent upon this method would be sound. The papers were selected upon the following bases:

Percentiles	Number of Papers
91—100	2
75—90	3
50—74	5
25—49	5
10—24	3
0—10	2
	N 20

In building a test to measure audience retention it was necessary to select a subject that would prove interesting to the average college class and at the same time one in which the material would be unfamiliar. It was decided to base the test on meaningful rather than fictitious material. Some psychologists in testing memory have resorted to the use of nonsense syllables, numbers, puzzles, and other forms. Meaningful material has enjoyed little prominence in experiments dealing with memory, due undoubtedly to the hazards entailed by its use. The test was designed to cope with the sources of error that inhere in such usage, and to attack the problem raised in the experiment by means of a procedure controlled to the fullest extent within the experimental method.

A topic was selected which was unfamiliar to the average American. Statements of a narrative nature, describing a small country, which is located in the southern part of Europe, were prepared. Approximately one hundred statements were composed describing some phase of the economic, political, geographical, religious, and psychological background of this country and its people. By a gradual process of elimination which consisted of testing various groups for familiarity with the material, a final selection was made consisting of fifty-two statements. In order further to insure unfamiliarity with the material, the experimenter always asked before reading the discourse if any member of the audience was familiar with the general subject. In one instance only was an individual familiar with the country, and he was naturally excused during the experiment.

Each statement was given a number so it could be identified during rotation, and the original number assigned to a statement remained constant throughout the experiments. With the use of repetition as employed in the experiments the test in its final form

TABLE I

CHART SHOWING THE POSITION, TREATMENT, AND SEQUENCE OF STATEMENTS WHEN STATEMENT 1 APPEARS IN POSITION 1

Statement No.	Position	
1	1	
2	2	
3	3	
4	4	
5	5	—Repeat this statement in position 55.
6	6	
7	7	
8	8	—Repeat this statement in positions 29 and 52.
9	9	
10	10	
11	11	
12	12	—Repeat this statement in positions 24, 36, and 48.
13	13	
14	14	—Use a gesture in this position.
15	15	
16	16	
17	17	—Repeat this statement immediately, in position 18.
17	18	
18	19	
19	20	—Use a soft voice in this position.
20	21	
21	22	
22	23	
12	24	—Use statement appearing in position 12.
23	25	
24	26	—Use a slow delivery in this position.
25	27	
26	28	
8	29	—Use statement appearing in position 8.
27	30	
28	31	
29	32	
30	33	—Use a loud voice in this position.
31	34	
32	35	
12	36	—Use statement appearing in position 12.
33	37	
34	38	
35	39	—Pause before giving this statement.
36	40	
37	41	
38	42	—Repeat this statement immediately in position 43.
38	43	
39	44	
40	45	
41	46	—Use "Now get this" in this position.
42	47	
12	48	—Use statement appearing in position 12.
43	49	
44	50	
45	51	
8	52	—Use statement appearing in position 8.
46	53	
47	54	
5	55	—Use statement appearing in position 5.
48	56	
49	57	
50	58	
51	59	
52	60	

TABLE II

CHART SHOWING THE TREATMENT AND SEQUENCES OF STATEMENTS AS PRESENTED TO THE VARIOUS POPULATIONS

	Standard Form	Populations																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1st Position	1	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	2	5	8	11
2nd Position	2	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12
Etc.	3	5	8	11	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13
	4	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	2	5	8	11	14
2 Repetitions	5	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15
	6	8	11	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16
	7	9	12	15	18	21	24	27	30	33	36	39	42	15	48	51	2	5	8	11	14	17
3 Repetitions	8	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18
	9	11	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19
	10	12	15	18	21	24	27	30	33	36	39	42	45	48	51	2	5	8	11	14	17	20
	11	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18	21
4 Repetitions	12	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22
	13	15	18	21	24	27	30	33	36	39	42	45	48	51	2	5	8	11	14	17	20	23
Gesture	14	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18	21	24
	15	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22	25
	16	18	21	24	27	30	33	36	39	42	45	48	51	2	5	8	11	14	17	20	23	26
Immediate Repetition	17	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18	21	24	27
	18	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18	21	24	27
	19	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22	25	28
Soft	20	21	24	27	30	33	36	39	42	45	48	51	2	5	8	11	14	17	20	23	26	29
	21	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18	21	24	27	30
	22	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22	25	28	31
	23	24	27	30	33	36	39	42	45	48	51	2	5	8	11	14	17	20	23	26	29	32
4 Repetitions	24	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22
	25	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18	21	24	27	30	33
Slow	26	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22	25	28	31	34
	27	27	30	33	36	39	42	45	48	51	2	5	8	11	14	17	20	23	26	29	32	35
	28	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18	21	24	27	30	33	36
3 Repetitions	29	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18

TABLE II—Contd.

	Standard Form	Populations																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	30	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22	25	28	31	34	37
	31	30	33	36	39	42	45	48	51	2	5	8	11	14	17	20	23	26	29	32	35	38
	32	31	34	37	40	43	46	49	52	3	6	9	12	15	18	21	24	27	30	33	36	39
Loud	33	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22	25	28	31	34	37	40
	34	33	36	39	42	45	48	51	2	5	8	11	14	17	20	23	26	29	32	35	38	41
	35	34	37	40	43	46	49	52	3	6	9	12	15	18	21	24	27	30	33	36	39	42
4 Repetitions	36	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22
	37	35	38	41	44	47	50	1	4	7	10	13	16	19	22	25	28	31	34	37	40	43
	38	36	39	42	45	48	51	2	5	8	11	14	17	20	23	26	29	32	35	38	41	44
Pause	39	37	40	43	46	49	52	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
	40	38	41	44	47	50	1	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46
	41	39	42	45	48	51	2	5	8	11	14	17	20	23	26	29	32	35	38	41	44	47
Immediate Repetition	42	40	43	46	49	52	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48
	43	40	43	46	49	52	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48
	44	41	44	47	50	1	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49
	45	42	45	48	51	2	5	8	11	14	17	20	23	26	29	32	35	38	41	44	47	50
"Now"	46	13	16	19	52	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51
	47	44	47	50	1	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52
4 Repetitions	48	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10	13	16	19	22
	49	45	48	51	2	5	8	11	14	17	20	23	26	29	32	35	38	41	44	47	50	1
	50	46	49	52	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	2
	51	47	50	1	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3
3 Repetitions	52	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15	18
	53	48	51	2	5	8	11	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4
	54	49	52	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	2	5
2 Repetitions	55	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9	12	15
	56	50	1	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6
	57	51	2	5	8	11	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7
	58	52	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	2	5	8
	59	1	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	3	6	9
	60	2	5	8	11	14	17	20	23	26	29	32	35	38	41	44	47	50	1	4	7	10

Note—Numbers in Body of Table Represent the Statements as Numbered in Original Form

consisted of sixty statements, comparable to a speech of information approximately fifteen minutes in length.

A "Standard Form" (Table I) shows the sequence of statements as they would appear if presented in numerical order. As an illustration, statement number 1 would be in position 1, statement number 2 would appear in position 2, statement number 3 would appear in position 3, etc. By observing the "Standard Form" one can see that statement number 5 falling in the 5th position would be repeated in the 55th position, statement number 12 falling in the 12th position would be repeated in the 24th, 36th, and 48th positions, and the treatment and positions of other statements can be determined accordingly.

Twenty-one different arrangements of the material were used with twenty-one groups of subjects. By using a different arrangement, as the result of rotation, before each group it was possible to use the same statements in different positions. The exact position of each statement as it appeared before each group is shown in Table II. As an illustration statement 10 appears in the Two Repetitions position in Population number 2, in the Three Repetitions position in Population number 1, and in the Four Repetitions position in Population number 17. This system of rotation provided that a certain statement which, in a given presentation, occurs in connection with another mode of emphasis in another presentation, and still in other instances appears in a "neutral" or unemphasized position.

To have one individual, trained in the art of public speaking, deliver the discourses before all of the groups, would tend to influence the results because of the skilled presentation and the speaker's particular personality. Conversely, to have a person unskilled in the art of public speaking deliver the discourses would tend to influence the results negatively. Even among trained speech teachers there is a great difference in personality traits. Therefore it was deemed advisable to have several capable speech teachers deliver the discourses, thereby neutralizing the effect a particular personality might have upon the presentation of the material and at the same time approaching parallel conditions under which the tests were given.

The criticism always levied at people who conduct testing experiments is that, because of various factors that might disturb a class, the results cannot be taken too seriously. Ventilation, poor lighting, inability to understand the experimenter, are some of the many accusations leveled at one who attempts a testing project. Granted that many criticisms are valid, it is hardly conceivable that, in a modern university classroom made up of mature students, these criticisms are justified.

Due to the cooperation of outstanding speech teachers administering the test it was possible to control the physical properties of the various rooms in which the tests were given. There was no danger of a student not understanding the statements because of weak voice, high pitch, nasality, and other defects, for the trained speech teacher will fit his voice to meet the acoustical properties of the particular room in which he is speaking.

In presenting the test the experimenter simply announced to the class that he would read a series of statements describing a certain unfamiliar country, and that a test for recall would follow. Each text was typewritten in full so all repetitions and the like were exact. In the margin of each page appeared any directions relative to the

special forms of emphasis, such as "loud voice," "gesture," etc. The experimenter familiarized himself with the material before giving the test, so that the actual presentation was similar to a typical classroom lecture in which there is occasional reference to notes. With several capable experimenters cooperating in the project, it was possible to neutralize any effects that might accompany the presentation of the material to all of the population by a single experimenter.

Following the presentation a multiple-choice questionnaire was handed to each subject and he was told to check as many correct answers as possible. The papers were then collected, twenty selected according to the percentile rankings previously referred to, and the data compiled from the papers of these matched groups form the bases for statistical treatment.

Treatment and Interpretation of Data

In order to compare the value of one Mode of Emphasis in relation to another, five different statements were used as a basis for the comparison. To elaborate, five statements were selected as they appeared in one experimental position, and these same statements were then compared as they appeared in another experimental position. For example, in determining the value of Immediate Repetition, early in the discourse, in comparison to Immediate Repetition, late in the discourse, five statements were selected from the chart shown in Table II, each of which had been presented in these two different positions. The statements selected were 40, 43, 46, 49, and 52. More specifically, statement 40 appears in the Immediate Repetition position in the early part of the discourse in Population 8; statement 43 appears in the same position in Population 9; statement 46 in Population 10; statement 49 in Population 11; and statement 52 in Population 12. Thus we have five different statements appearing in the same Mode of Emphasis in five matched Populations.

Using these five identical statements we again consult Table II and find that in the Immediate Repetitions position, in the latter part of the discourse, statement number 40 appears in Population 1, statement 43 in Population 2, statement 46 in Population 3, statement 49 in Population 4, and statement 52 in Population 5. In order to evaluate the two modes we must check the individual populations for correct retention of these statements as revealed by the questionnaires which were used by the individual subjects making up each population.

For Immediate Repetition, early in the discourse, the data collected revealed that for Population 8, consisting of 20 subjects, a correct recall of 14 for statement 40; for Population 9, consisting of 20 subjects, a correct recall of 15 for statement 43; for Population 10, consisting of 20 subjects, a correct recall of 15 for statement 46; for Population 11, consisting of 20 subjects, a correct recall of 12 for statement 49; and for Population 12, consisting of 20 subjects, a correct recall of 16 for statement 52. By adding the correct recalls (14, 15, 15, 12, 16) we find 72 correct answers out of a possible 100. In other words, the value of Immediate Repetition, as it appeared in the early part of the discourse, was 72% ± 3.0.

The Percentage of Error was determined by using the following formula:

Standard Error of a Proportion is:

$$\sigma p = \sqrt{\frac{pq}{N}}$$

where p equals the percentage or proportion, q equals the difference between p and 1.00, and N equals the number of cases.

PERCENTAGE OF ERROR OF A PROPORTION IS:

$$PE_p = .667\sqrt{\frac{pq}{N}}$$

For Immediate Repetition, in the latter part of the discourse, the data collected revealed for Population 1, consisting of 20 subjects, a correct recall of 14 for statement 4●; for Population 2, consisting of 20 subjects, a correct recall of 13 for statement 43; for Population 3, consisting of 20 subjects, a correct recall of 11 for statement 46; for Population 4, consisting of 20 subjects, a correct recall of 13 for statement 49; and for Population 5, consisting of 20 subjects, a correct recall of 16 for statement 52. Following the same method we find the value of Immediate Repetition, in the latter part of the discourse, to be 67% ± 3.2.

The differences between the two percentages is 5 and by using the formula:

STANDARD ERROR OF A DIFFERENCE IS:

$$\sigma \text{ diff.} = \sqrt{\sigma p_1^2 + \sigma p_2^2}$$

$$\text{P.E. of a diff.} = \sqrt{.667\ (\sigma p_1^2) + .667\ (\sigma p_2^2)}$$

or

$$\text{P.E. Diff.} = \sqrt{\text{P.E.}_{p^1}^2 + \text{P.E.}_{p^2}^2}$$

We find the difference to be 5 ± 4.4. By further computation and using the formula:

$$\text{Critical Ratio} = \frac{\text{Diff.}}{\text{P.E. Diff.}}$$

we find the Critical Ratio to be 1.1. To summarize:

A Mode Immediate Repetition Early in Discourse	B Mode Immediate Repetition Later in Discourse	A-B Diff.	Critical Ratio
72 ±3.0	67 ±3.2	5 ±4.4	1.1

In order to interpret the above summary we must designate a point on the scale of Critical Ratios in order to draw a line of demarcation between real differences and chance differences. The present study has arbitrarily chosen 2.00 and above as indicating a real difference. The complete table of chance differences is as follows:

Critical Ratio	Chances in 100 that difference is real
.00	50
.50	63
1.00	75
1.50	84
2.00	91
2.50	95
3.00	98
3.50	99
4.00	100 (99.7)

Thus we see that the difference between these two Modes of Emphasis is not significant; in other words the difference that exists may be interpreted as due to chance. The Critical Ratio of one Mode of Emphasis as compared with another Mode of Emphasis is shown in Table III. By observing the Critical Ratio column at the extreme right we can interpret the relationship that exists between the compared Modes.

In determining the value of a Mode of Emphasis as compared with non-emphasis, the same procedure was followed, with this exception: the five statements used in the experimental position were compared with the same statements as they appeared in a neutral or unemphasized position. These values are shown in Table IV.

The system of rotation of material, which provided that a statement appearing in a certain population, in connection with a particular experimental position, appearing in another population in a different experimental position or in a neutral position, provided the means of checking a Mode of Emphasis against another Mode of Emphasis, or

TABLE III

THE RELATIVE EFFECTIVENESS OF SPECIFIC MODES OF EMPHASIS

A Mode		B Mode		A—B Diff.	Critical Ratio Diff. P.E. Diff.
3 Distributed Repetitions	78±2.7	2 Distributed Repetitions	58±3.4	20±4.2	4.7
4 Distributed Repetitions	60±3.3	2 Distributed Repetitions	58±3.4	2±4.7	.4
3 Distributed Repetitions	78±2.7	4 Distributed Repetitions	60±3.3	18±4.3	4.1
"Now get this"	86±2.4	Gesture	66±3.2	20±4.0	5.0
Slow	76±2.9	Loud Voice	51±3.4	25±4.5	5.5
Immediate Repetition (Early)	72±3.0	Immediate Repetition (Late)	67±3.2	5±4.4	1.1
Pause	69±3.2	Soft Voice	56±3.4	13±4.7	2.7

TABLE IV

THE RELATIVE EFFECTIVENESS OF A MODE OF EMPHASIS COMPARED TO A NEUTRAL TREATMENT

	A Mode	B Neutral	A—B Diff.	Critical Ratio Diff. P.E. Diff.
"Now"	86±2.4	53.2±1.6	32.8±2.9	11.3
3 Repetitions	78±2.7	51.4±1.6	26.6±3.1	8.6
Repeat (Early)	72±3.0	50.7±1.6	21.3±3.4	6.3
Slow	76±2.9	59.8±1.6	16.2±3.3	4.9
Repeat (Late)	67±3.2	50.7±1.6	16.3±3.6	4.5
Pause	69±3.2	55.4±1.6	13.6±3.6	3.8
Gesture	66±3.2	53.2±1.6	12.8±3.6	3.6
4 Repetitions	60±3.3	51.4±1.6	8.6±3.7	2.3
2 Repetitions	58±3.4	51.4±1.6	6.6±3.8	1.7
Soft Voice	56±3.4	55.4±1.6	.6±3.8	.16
Loud Voice	51±3.4	59.8±1.6	—8.8±3.8	—2.3

checking a Mode of Emphasis against a neutral treatment. By recording the correct recalls for the various statements in different positions it was possible to evaluate the various experimental positions and thus to determine statistically the relative values of the Modes of Emphasis as used in public speaking.

To the query raised in the problem regarding the effectiveness of the various forms of emphasis, and the determination of chance differences following a comparison of these various forms of experimental treatment, the results, as shown in Table IV, yield a very definite answer.

To call the attention of the audience to an important remark before uttering that remark is by far the most effective means of assuring retention of the statement. This has significant meaning for the public speaker. To be sure, he may be more subtle in his approach in an actual speaking situation; however, the fact remains that if the attention of the audience is focused upon the statement to be uttered, increased retention is assured. The type of material used in the speech, the make-up of the audience, and the personality of the speaker will condition the phraseology of the preceding accessory comment, but the representative, "Now get this," used in the test, in spite of its crudity, demonstrates

a degree of impressiveness that cannot be challenged. This result can be accounted for in part, no doubt, on the assumption that an audience will gauge the relative importance of items within an address largely in terms of stress, either explicit or implied, placed upon them by the speaker himself.

With regard to the effects of scattered repetition the results are rather contrary to popular opinion. Three scattered repetitions rank third in importance, while four scattered repetitions rank eighth, and two scattered repetitions rank ninth. This might seem a bit confusing as most authorities have assumed that to repeat a remark over and over will guarantee retention—the more repetitions, the greater the retention.

In general, this belief of repeated repetition to insure retention is quite sound; but when applied to a speaking situation, it would not seem unreasonable to expect different results. Taking the discourse used in the experiment as an illustration, we find that when a statement is given in the beginning of the speech, repeated approximately in the middle of the speech, and repeated for a third time toward the end of the speech, a very high retention is assured. This result would seem only natural as the repetitions fall in a sort of natural division that one might expect in a speech of fifteen minutes duration. In other words, we are not overdoing the stress on a particular statement, and we assure ourselves of increased fixation by following a well-spaced and effective means of repetition.

On the other hand, to repeat a statement four or five times at close intervals might have a negative effect. This is what resulted in the present experiment since the statements used in connection with four scattered repetitions were found to rank generally lower on recall than the same statements when used in three scattered repetitions. Personal observation during the experiment revealed that when an audience became aware of repeated repetition at intervals not well-spaced, a sort of boredom and poor attention resulted. The attitude seemed to be—"I've heard this remark before, so why listen now." As a result of this non-fixation, confusion resulted when recall was attempted. To have a statement given in the early part of the discourse and then to have it repeated toward the end of the discourse is not as effective as immediate repetition. This is a case of too little repetition as compared with the previous illustration of too much repetition. It is obvious that the length of any speech will determine the amount of repetition necessary for maximum recall. It should also be borne in mind that the type of material will also condition the amount of repetition. In the present experiment which attempted to approximate an informative speech of fifteen minutes, the results show very clearly that three distributed repetitions are better than two or four. In the experiment conducted by Jersild[27] this conclusion is reported:

> With regard to the effects of repetition the results are clear. Threee or more repetitions score higher on recall. . . . Yet it appears that the value of increased repetition does not by any means rise in proportion to the added number of repetitions. Five repetitions are in no wise as effective as one repetition; nor are four repetitions twice as effective as two. The relatively low scores for four and five repetitions . . . are in part due to the fact that in some instances three repetitions were sufficient to bring about unanimous recall for some statements, and as a result the record for immediate recall gives no

[27] Jersild, A., "Modes of Emphasis in Public Speaking," *Journal of Applied Psychology*, XII (1928), 613-620.

indication of the effect of repetition continued beyond that point (three repetitions).

A detailed explanation of Jersild's experiment will be discussed later; but it is significant to note at this point that the conclusions of the present experiment, relative to distributed repetition, while not agreeing with Jersild's contention that increased repetition results in greater retention, nevertheless agree to the extent that in some cases three repetitions are all that is necessary for maximum retention and that increased repetition beyond that point follows the law of diminishing returns.

The device next in importance is Immediate Repetition in the early part of the discourse. It is interesting to note that Immediate Repetition in the latter part of the discourse carries about the same value, the Critical Ratio between these two Modes of Emphasis being 1.1. This result is important because it indicates that to repeat a remark immediately is more effective than many of the other Modes of Emphasis. It would seem only natural to have an audience take notice of a remark uttered twice in succession. If the speaker thinks the remark is important enough to repeat, the audience should react accordingly.

In reference to the Slow Mode we find a high retentive value for this mode of emphasis. Again the audience is cognizant of the importance of the statement by the mode of emphasis. When the speaker retards his speaking rate to half the normal rate the presentation is inevitably accompanied by a sense of deliberateness. This attitude cannot be overlooked by the audience, and increased fixation results. This device of emphasis will provide the speaker with a very effective means of assuring retention.

In direct contrast to the above device of emphasis we find that the use of a loud or semi-bombastic voice has a decidedly negative effect. This conclusion is probably hard to understand when we look back upon our own personal experiences. All of us have been impressed at one time or another by speakers who used grandiose, oratorical mannerisms accompanied by forceful, loud voices. But if we analyze our impressions more closely, were we impressed by *what* the speaker said or by *how* he said it? Did we retain those statements uttered in a loud voice more easily than those uttered in a normal voice? Did the speaker not affect us emotionally more than intellectually? Again we must take recognition of the fact that the types of audiences will influence the type of delivery. In speaking before a political gathering, a convention, or other easily motivated audiences, it might seem entirely justifiable to punctuate the delivery with the use of a loud voice in order to impress that audience with certain statements. On the other hand, would it not seem just as reasonable to impress the audience by using a conversational type of delivery with the sincerity that accompanies this style? The results of the experiment show conclusively that to use a normal voice is more effective than to use a loud voice. Personal observation during the experiment showed that the subjects were more interested in the technique involving the loud voice than with the content of the statement. Several subjects made this interesting comment to the experimenter after the experiment was over. This attitude on the part of the audience is probably due to the fact that the modern generation is being trained, to a great extent, in the conversational type of delivery. There are indications

that the old type of platform speaking with all of its dramatic mannerisms has become passé, and in its place has been substituted the modern conversational style. This change in style has been influenced, to a great extent, by the ever increasing use of the radio and the public address system. The experiment implies that in comparing all of the devices of emphasis, the use of a loud voice ranks at the very bottom; in fact, it has a negative effect.

If a loud voice is ineffective as a means of emphasis, what is the effect of a soft voice? The results show that statements used in connection with this Mode of Emphasis have a Critical Ratio of .16 in comparison to a neutral treatment of the same statements. So the evidence offers very little value for the use of a soft voice. There is a tendency among speakers to employ the soft voice in connection with a statement of importance, reasoning that the contrast will provide additional emphasis. There is always the danger, however, of the audience not understanding the remark because of decreased amplitude. The general conclusion in regard to any change in the accustomed amplitude of the voice is that it is better to maintain a rather steady degree. In view of the evidence that increased retention is not forthcoming, changes in force should be in relation to the general effect of creating a non-monotonous delivery, rather than a means of increasing the retention.

In the various modes of emphasis compared in the study two very important devices yet remain to be discussed: first, the use of the pause; and, second, the use of gesture.

In discussing the use of a pause the retentiveness that accompanied statements preceded by a pause show a Critical Ratio of 3.8 in comparison to a neutral treatment. This is very interesting as it shows a high correlation between the proactive emphasis—"Now get this," and the use of a slow delivery, both of which consume about the same amount of time. It likewise shows a decided superiority over two distributed repetitions, which also consume about the same amount of time. This result tends to corroborate the view that a certain amount of active rehearsal is carried on by subjects while reacting to the presentation of memory materials. The rehearsal that takes place during an interval of delay is more advantageous than a repetition of the statement later in the discourse.

The use of gesture shows a beneficial effect equal to that of the pause. Here we visually attract the attention of the audience to the importance of the statement. In some populations the use of a gesture operated as a hindrance rather than an aid to retention. This should serve as a warning that in the use of gesture it should not be so noticeable that it will distract attention from the content of the statement. However, in general, the gesture, if properly used, serves as a definite aid to retention.

In computing the value of Primacy, Middle, and Recency, the same procedure was followed, except that five statements were selected from each population instead of one statement. By following this procedure it was possible to compare twenty-five statements appearing in the beginning of the discourse with the same statements as they appeared in the middle of the discourse, and with the same statements as they appeared toward the end of the discourse. These values are shown in Table V.

In observing the effects of Primacy, Recency, and Middle, we can conclude

TABLE V

THE RELATIVE EFFECTIVENESS OF PRIMACY, MIDDLE, AND RECENCY

A	B	A—B Diff.	Critical Ratio Diff. P.E. Diff.
Middle .....54.4±1.6	Primacy .....50.2±1.6	4.2±2.3	1.8
Recency .....58.6±1.6	Primacy .....50.2±1.6	8.4±2.3	3.6
Recency .....58.6±1.6	Middle .....54.4±1.6	4.2±2.3	1.8

that little difference exists between Primacy and Middle, and Middle and Recency, but a noticeable difference is evident between Primacy and Recency. This evidence supports the belief that an audience tends to remember the latter part of a speech rather than the first part, and that it will remember more of the middle than the beginning. In other words the more recent the utterances the more likely the retention. In the actual preparation and delivery of a speech the common practice is to place the important items not in the beginning, but rather in the middle and toward the end. The beginning is commonly used for the purpose of enabling the speaker to gain the favorable attention of the audience. So it would seem wise to wait until this attention is assured before attempting to impress the audience with pertinent data. The evidence of the experiment supports this rhetorical practice of present-day speech training.

The present study yielded definite results and it represents one of the few efforts made to record and compare the various devices of emphasis as used in public speaking. The present study represents the first effort ever made to employ the use of refined statistical treatment to a problem of this sort, thereby endorsing the principles of scientific procedure. If we are to compare the present findings with similar findings in the first experiment, it becomes necessary to offer a detailed outline of the procedure and technique employed by the first experimenter. The following description is a condensed summary of Jersild's[28] experiment.

A test was constructed consisting of seventy separate statements, each statement representing a fact regarding the life of a fictitious character. Ten different arrangements of the material were used before ten different groups of college students. The groups ranged from ten subjects to forty-six subjects and in all 253 people were tested. The material was rotated so that a different arrangement would appear before each group and individual statements would appear in different positions before each group tested. Following the speech, which was given by the same experimenter before all groups, the subjects were told to reproduce in writing as many statements as they could remember. Two sets of scores were produced, the first being the numerical score of a statement representing the number of correct reproductions of the statement in connection with which it was used, and the second being a percentage score based upon the numerical score of a statement as it appeared in an experimental position in comparison to the same statement as it appeared in an unemphasized position. The experimenter attempted to measure and compare the various devices of emphasis as used in public speaking, many

[28] See footnote 26.

TABLE VI

MODES OF EMPHASIS WITH CORRESPONDING RANK AS REVEALED BY JERSILD AND THE PRESENT EXPERIMENT

Mode of Emphasis	Rank Jersild	Rank Present Experiment
"Now get this"	3	1
Immediate Repetition, late in discourse	9	2
3 Distributed Repetitions	2	3
Slow	11	4
Immediate Repetition, early in discourse	6	5
Pause	5	6
Gesture	8	7
4 Distributed Repetitions	1	8
2 Distributed Repetitions	4	9
Soft Voice	—	10
Loud Voice	7	11
Banging fist on table	10	—

Note—The Jersild experiment did not attempt to record the Soft Voice.
The present experiment did not attempt to record Banging Fist on Table.

of which were included in the present study.

A comparison of the two experiments reveals the following paramount differences relative to the technique employed:

Jersild's Experiment

1. Use of fictitious material
2. Ten unmatched populations
3. One experimenter
4. Pure recall
4. Non-statistical treatment of data

Present Experiment

1. Use of meaningful material
2. Twenty-one matched populations
3. Ten experimenters
4. Use of questionnaire
5. Statistical treatment of data

To what extent these differences may influence any comparison cannot be accurately determined. Certainly these differences cannot be ignored. It is also worth noting that, in view of the fact that a longer discourse was prepared in the earlier experiment, an attempt was made to measure other forms of emphasis, forms which the present experimenter considered irrelevant. To illustrate, banging the fist on the table is seldom used by public speakers of today. In comparing the results the eleven modes of emphasis used in the present experiment are listed in Table VI. In each experiment one mode is listed which did not appear in the other experiment. The modes of emphasis are given with their corresponding rank as revealed by Jersild and the present experiment.

The most notable difference that exists between the two experiments is the negative effect for the Slow Mode in the Jersild Experiment as contrasted with the negative effect for the Loud Mode in the present experiment. One can easily recognize the differences that exist between the Distributed Repetition Modes for each study, but this difference has already been discussed earlier in the chapter. All of the other modes of emphasis as they are presented in each experiment show a very definite positive correlation between the two experiments, with the exception, of course, of the Loud and Slow Mode referred to already. It is also interesting to note that each experiment showed only one device as having a negative effect. If we exclude the Slow delivery in the Jersild experiment and the Loud delivery in the present experiment, we can emphatically state that each experiment proved a positive value for the various modes of em-

phasis. The differences that exist between the two experiments are merely the degree of impressiveness that accompanies a particular mode.

Conclusions

The present study attempted, for the first time, to determine the relative effectiveness of the various Modes of Emphasis as used in public speaking, through the medium of the experimental method and refined statistical treatment. The following facts, based upon the data collected and treated statistically, summarize the results of the experiment.

1. The most effective means of assuring retention of a statement is to precede the statement by pro-active emphasis such as "Now get this."
2. The immediate repetition of a statement early in the discourse assures high retention.
3. The immediate repetition of a statement late in the discourse assures high retention.
4. The difference between immediate repetition early in the discourse, and immediate repetition late in the discourse is not significant.
5. Three scattered repetitions are very effective and more significant than two or four.
6. Four scattered repetitions are more effective than two.
7. Two scattered repetitions have little value in increasing retention.
8. The evidence implies that concentrated repetition is more effective than distributed repetition.
9. Increased repetition beyond three tends to indicate a law of diminishing returns.
10. To retard the rate of articulation increases the retention of a statement.
11. To pause before presenting a statement has definite retentive value.
12. The difference between the pause and slow mode is not significant.
13. The use of a gesture is effective in increasing retention.
14. There is little difference between the effectiveness of a pause and the effectiveness of a gesture.
15. While the soft voice shows a slight positive effect it cannot be regarded as significant.
16. The use of a loud voice shows a tendency to decrease rather than to increase retention.
17. Of the eleven modes tested only one, the loud voice, shows a negative effect.
18. Of the eleven modes tested, nine show a Critical Ratio of significant importance.
19. Middle stands out as slightly superior to Primacy as an aid to recall.
20. Recency stands out as slightly superior to Middle as an aid to recall.
21. Recency stands out as definitely superior to Primacy as an aid to recall.

It is hoped that the conclusions reached in the present study, combined with those reached in the Jersild experiment, will shed some light on the Modes of Emphasis as used in public speaking. It is also hoped that the present study will provide new experimental evidence on the subject of emphasis, and additional background for further experimentation.

THEODORE ROOSEVELT'S PRINCIPLES OF SPEECH PREPARATION AND DELIVERY*

WILLIAM A. BEHL, 1st. Lt., A.A.F.
Maxwell Field, Alabama

THE name of Theodore Roosevelt will not be remembered as that of a great orator; he was not a great orator. His name is more closely associated with the "trusts," the Panama Canal, and the "Square Deal." But since he delivered more speeches and influenced more people than anyone else in this country for approximately the first fifteen years of the twentieth century[1] it would seem that his principles and practice of preparation and delivery should be of interest and value to the student of public speaking.

Early Training

There was little in the early training of Theodore Roosevelt that contributed directly to his ability as a speaker. He did not show any particular interest in public speaking and debate as an undergraduate at Harvard College or as a law student at Columbia University. His experiences in speaking were limited to a few formal debates and some informal debates and discussions before clubs to which he belonged at Harvard College.[2] His audience was not particularly impressed with his effort.[3] While his early attempts at public speaking undoubtedly gave him a certain "feel" for audience situations, it can hardly be said that they were a significant contribution to his eminence as a speaker.

Roosevelt was not particularly proud of his lack of training in public speaking. As a matter of fact he said:

> I am sorry I did not study elocution in college; but I am exceedingly glad that I did not take part in the type of debate in which stress is laid, not upon getting a speaker to think rightly, but on getting him to talk glibly on the side which he is assigned, without regard either to what his convictions are or to what they ought to be.[4]

Much of Roosevelt's training as a speaker was obtained during his three years in the Assembly of the legislature of the State of New York. While he was attending Columbia Law School in 1880, he joined the Twenty-First District Republican Association in New York City and was nominated for Assemblyman in 1881. He delivered few campaign speeches, but Chauncey Depew recalled on one occasion that his speeches were "well prepared" and that "it was remarkable in the emphatic way in which he stated" his case.[5]

His first few speeches in the Assembly reflected his lack of training as a speaker. He depended too much "upon the support of the desk," "he opened his mouth rather wide in the act of inhalation," and "he yelled and pounded his desk."[6] But in spite of noticeable man-

*From a dissertation, "The Rhetoric of Theodore Roosevelt," directed by Dean James H. McBurney and submitted in partial fulfillment of the degree of Doctor of Philosophy at Northwestern University.

[1] Shaw, Warren C., *History of American Oratory* (Indianapolis, 1928), p. 581.

[2] Gilman, Bradley, *Roosevelt, The Happy Warrior* (New York, 1923), pp. 27, 39. Similar reports by Professor Palmer, Roosevelt House Papers.

[3] Thayer, William R., *Theodore Roosevelt, an Intimate Biography* (New York, 1919), p. 20.

[4] *Autobiography* (New York, 1919), p. 25.

[5] Depew, Chauncey M., *My Memories of Eighty Years* (New York, 1922), p. 159.

[6] *Albany* (New York) *Press*, January 3, 1882; Roosevelt House Papers, Assembly; Part of a conversation between Hermann Hagedorn, George Spinney, and Assemblyman Hunt at a Harvard Club dinner in New York City on September 20, 1923.

nerisms, his speeches from the beginning were praised because of his sincerity, courage, and straightforward manner of speaking.[7] And he did improve in his ability to speak,[8] and to think of his audience.[9]

Roosevelt said of his forensic efforts while in the New York Assembly: "Like all young men, I had considerable difficulty in teaching myself to speak." He said he profited much by the advice of a "hard-headed old countryman" who advised him: "Don't speak until you are sure you have something to say; then say it, and sit down."[10] There are at least four principles in this advice that probably influenced Roosevelt as a speaker: have something to say, have a definite purpose, speak as well as you can, and make your speech as short as possible.

Apparently Theodore Roosevelt did not like public speaking, and during his early manhood had no intention of making politics his life's work, and therefore did not feel the necessity of training in that subject. The New York Assembly provided most of Roosevelt's early training when once he found himself, willy nilly, engaged in public speaking.

His Theory of Public Speaking

Roosevelt did not leave, among his many volumes of writing, a treatise on public speaking. He did, however, drop bits of information in books, letters, and speeches, that gave some clue to his theory of public speaking.

Roosevelt thought that it was the proper duty of a speaker to influence the beliefs and actions of an audience. On this point, he said, "I simply made up my mind what they ought to think, and then did my best to get them to think it."[11]

Roosevelt believed that the character of the speaker was the most important source of his persuasive power. Among the important attributes of character was sincerity. "An orator would get a crowd, but he could not hold them if he lacked sincerity."[12] "If he isn't sincere, he has no business speaking."[13] He believed, too, that one should be friendly. To Taft, in 1908, he said, "Let the audience see you smile."[14] But sincerity and friendliness should not be superficial; a speaker should use his persuasive powers to influence people to do good. "To admire the gift of oratory without regard to the moral quality behind the gift is to do wrong to the republic."[15]

Roosevelt held that one who spoke should say something worth while. In one place he put it this way:

> Our opponents are stronger at oratory than they are on action. We have read in the Good Book that "Ephraim feedeth on the wind." There is no possible objection to that so long as Ephraim enjoys it. But there is no call for our sharing the food.[16]

He refused to speak on occasions when he felt that he was not thoroughly qualified to speak.[17]

Roosevelt expressed some ideas concerning the composition of speeches

[7] Roosevelt House Papers, Assembly; Spinney Report, *New York Times*, April 8, 1882; Bishop, Joseph Bucklin, *Theodore Roosevelt and His Time* (New York, 1920), I, 28.

[8] Bishop, *op. cit.*, p. 28.

[9] Roosevelt, *Autobiography*, p. 66.

[10] *Ibid.*

[11] Bishop, *op. cit.*, II, 414.

[12] Leary, John J., Jr., *Theodore Roosevelt* (Boston, 1920), p. 72.

[13] *Ibid.*, p. 74.

[14] Pringle, Henry F., *Theodore Roosevelt, a Biography* (New York, 1931), p. 504.

[15] Roosevelt, *African and European Addresses*, edited by Lawrence F. Abbott (New York, 1910), p. 49 (in his address at the Sorbonne, Paris, France, April 23, 1910).

[16] Roosevelt House Papers; speech delivered in the presidential campaign at Lafayette, Indiana, on October 10, 1900.

[17] Roosevelt House Papers; letter from Roosevelt to F. J. Ranlett, Boston, Massachusetts, June 24, 1907.

which indicated that he had a practical understanding of the psychology of the audience. On one occasion, he said to William Howard Taft, "Stop citing court decisions. . . . You must treat a political audience as one coming not to see an etching but a poster. You must have streaks of blue, yellow, and red to catch the eye."[18] And in addition to displaying a "poster" instead of an "etching," he maintained that many different posters had to be displayed on the same subject in order to get the idea across and make it stick. Said Roosevelt, "You have to iterate and reiterate until you are pretty well weary of the very sound of your own voice."[19]

These scattered opinions concerning public speaking indicate that, although Roosevelt was not a student of rhetoric, from his practical experiences in public speaking he evolved fundamentally sound principles.

Content

The source of the content of his speeches was largely his own experiences, convictions, reading, writing, and imagination. Roosevelt was an omnivorous reader all his life. His reading covered a variety of literature including the *Bible,* English and American poets, history, natural science, and American and English novels. A newspaper reporter said that during the campaign of 1904, "he happened to know that Roosevelt re-read all of Macaulay's *History of England;* all of Rhodes' *History of the United States;* and Dickens' *Martin Chuzzlewit.*[20] Much of his reading was superficial but much was thorough and critical even though his cricism was "judged in the light of his own stern moral code."[21] He did not hesitate to write to such critics as John Morley and Joel E. Spingarn to express his view on some piece of literature.[22]

Roosevelt's own writing, too, was a source of the content of his speeches. Exclusive of addresses and uncollected magazine articles, Roosevelt wrote approximately one hundred and fifty thousand letters and approximately two million five hundred thousand words in permanent literary form.[23] His first, and probably his best literary effort, was *The Naval War of 1812.* Most of his writing dealt with history, politics, and natural science. To what extent the writing of Roosevelt contributed to his development as a speaker is a matter of conjecture. If, as Cicero said, "the pen is the best, the most excellent former and director of the tongue,"[24] it is not unreasonable to believe that Roosevelt's adventures in history and general letters were important in fashioning and maturing his oral style.

Certain basic convictions and beliefs undoubtedly influenced the content of his speeches. The conviction that "personal character and initiative are the prime requisites in political and social life,"[25] which he adopted early in his career, undoubtedly influenced what he said on many occasions. He referred to qualities of character in many of his speeches.[26]

Another principle he learned as a

[18] Sullivan, Mark, *Our Times* (New York, 1930), IV, 305-307.
[19] Wood, Frederick S., *Roosevelt as We Knew Him* (Philadelphia, 1927), p. 320. Also, letter from William Allen White, Emporia, Kansas, April 15, 1941, to the writer.
[20] *Indianapolis* (Indiana) *Morning Star,* March 30, 1905.
[21] Pringle, *op. cit.,* p. 473.
[22] Bishop, *op. cit.,* II, 132, 359.
[23] Roosevelt, *African and European Addresses,* p. 169.
[24] *De Oratore,* I, 33.
[25] Roosevelt, *Autobiography,* p. 59.
[26] *The Works of Theodore Roosevelt,* National Edition, editor, Hermann Hagedorn (New York, 1925), XVI, 67, 419; XIV, 291.

young Assemblyman was that he "would not try to think of the future at all, but would proceed on the assumption that each office he held would be the last one he would ever hold."[27] His adherence to this principle is a possible explanation for his "radicalism," both real and apparent.

That one should devise a "working compromise between the ideal and the practical"[28] was another conviction that undoubtedly was reflected in his utterances from the time he left the New York Assembly until he left the Presidency. The tenacity with which he clung to this conviction during the middle years of his political career may be an explanation of the "middle of the road" policy expressed so frequently in his campaign speeches, especially in those dealing with the trust problem. On the one hand he reprimanded the "wild preachers of radicalism," and on the other hand he condemned the "wealthy corporation owners."

A fourth principle enunciated by Roosevelt in which he regarded the executive office as "subject only to the people affirmatively in cases where the constitution did not explicitly forbid him to render the service,"[29] unquestionably influenced the frequency of his speaking tours throughout the country. Not long after he took office as President, he made a tour of the whole country delivering addresses in the principal cities and towns. "In all of them he explained fully his views in regard to the chief questions which he had been pressing upon Congress, laying special stress upon the necessity for legislation affecting trusts, . . ."[30] Shortly after he was elected President in 1905, he made a tour of the country to prepare the people for proposals he would advocate in his annual message to Congress.[31]

Probably the most important conviction that influenced Roosevelt in his written and spoken utterances was his steadfast belief that every problem whether social, political, or personal, had a right and wrong to it. Underlying all of his addresses was a definite reference to the moralities. In his most important speech as an Assemblyman from New York, he said, "We have a right to demand that our judiciary should be kept beyond reproach."[32] His objection to the trusts was basically a moral objection. Said Roosevelt, "Measure iniquity by the heart, whether a man's purse be full or empty."[33] His speeches during the presidential campaign of 1912 and the World War I period also contained expressions of moral judgment.[34]

In addition to these basic convictions which were formulated comparatively early in Roosevelt's life, his varied experiences added to his repertoire of topics for his speeches. He was born in the "silk stocking" district of New York City, and educated at Harvard. He spent several months as a rancher in the Dakotas; and as a hunter and explorer in Africa and South America. He was, in turn, an Assemblyman from New York, United States Civil Service Commissioner, Assistant Secretary of the Navy, Police Commissioner of New York City, Governor of New York, and finally, President of the United States. Experiences and associations in these many offices and occupations, naturally, provided much of the content of his

[27] Roosevelt, *Autobiography*, p. 88.
[28] Bishop, *op. cit.*, II, 356.
[29] Roosevelt, *Autobiography*, p. 354.
[30] Bishop, *op. cit.*, I, 49.
[31] Pringle, *op. cit.*, p. 420.
[32] *Works*, XIV, 11.
[33] *Works*, XVI, 8.
[34] *Works*, XVII, 213; *Newer Speeches*, III, 885.

speeches. The rest he derived from reading and thinking.

Methods of Preparation

While most of the content of his speeches was drawn from his own convictions and experiences, in the actual preparation of his more important speeches Roosevelt depended to a considerable extent on the advice and suggestion of other men. "The extent of his consultation with others was entirely dependent on how interested he was in his subject and the extent of his knowledge of it."[35] His first message to the legislature of New York was submitted in whole or in part to several men for criticism and suggestion. In a letter to Senator Platt in which Roosevelt asked him to make suggestions with "utmost freedom," he pointed out that he had already sent parts of his message to "General Greene, Supt. Patridge, State Engineer Bond, and Fox and MacFarlane" and the part on taxation he had sent to "Stranahan, Elihu Root, President Hadley of Yale, Professor Jenks of Yale, Professor Seligman of Columbia, Judge Cohen, and James A. Dill of New Jersey. . . ." In addition, he sent the part on labor to "Secretary of State McDonough, Professor Jenks, and Attorney General Griggs."[36] Again in 1900, Roosevelt sent his message to Tom Platt to "make suggestions with the utmost frankness."[37]

During his presidential years, Roosevelt consulted others rather freely about the content of his speeches. While preparing his first message to Congress, he said to Mark Hanna, "If you can come down here in the course of a week or two I should like to go over certain parts of my message with you, notably what I say about trusts, labor, and the tariff."[38] To Whitelaw Reid he said, "I send you the subdivision of my message on tariff and reciprocity. Pray return it with any comments you desire to make."[39] And to Congressman Cannon from Danville, Illinois, he wrote, "I should like to go over some parts of my message with you; also certain Illinois matters."[40] These are a few of the men to whom he sent all or a portion of his first message to Congress for comment and criticism.

Roosevelt was extremely careful about the content of his speech accepting the Republican Presidential nomination in 1904. He sent the portion about the passport question to Jacob H. Schiff and asked him to "make any recommendations and send it back."[41] He sent the portion of it concerning the fourteenth amendment to Booker T. Washington for criticism.[42] He sent the entire speech to Paul Morton of Chicago.[43]

Roosevelt not only consulted others about the content of his official addresses before Congress, but sought advice for the speeches he made on his frequent tours about the country. Before making an extended speaking tour in 1903, he wrote to Senator Lodge: "I would like to read over to you a couple of my speeches in which I shall touch on the

[35] Letter, Mr. Regis H. Post, Nantucket, Massachusetts, April 2, 1941, to the writer.

[36] Roosevelt House Letters, Roosevelt to Senator T. C. Platt, December 19, 1899.

[37] Pringle, *op. cit.*, p. 209.

[38] Roosevelt House Letters, Microfilm letter, Roosevelt to Dr. Lyman Abbott, November 8, 1901.

[39] Roosevelt House Letters, Microfilm letter, Roosevelt to the Honorable Whitelaw Reid, *New York Tribune*, November 8, 1901.

[40] Roosevelt House Letters, Microfilm letter, Roosevelt to the Honorable J. G. Cannon, Danville, Illinois, November 16, 1901.

[41] Library of Congress Letters, Roosevelt to Jacob H. Schiff, New York, August 5, 1904.

[42] Library of Congress Letters, Booker T. Washington to Roosevelt, August 24, 1904.

[43] Library of Congress Letters, Paul Morton to Roosevelt, July 18, 1904.

trusts and tariff. Can you come in Thursday evening at nine?"[44]

The speeches he delivered in Brazil, Argentina, and Chile were submitted to the official representatives of those countries in Washington for their approval before Roosevelt left on his exploration and speaking tour in South America in October, 1913.[45] A similar procedure was followed in the addresses he delivered in Egypt, Germany, France, England, and Norway during 1910.[46]

There is no evidence to indicate that Roosevelt consulted anyone on the content of his speeches made in the United States from 1910 to 1917. However, during the congressional elections of 1918, he consulted people rather freely. It is possible that he was looking to 1920 when he might be the Republican nominee for President. On one occasion Lodge wrote to Roosevelt that, "I have just read with care the proof of your speech for the Maine convention which Nick gave me."[47] In a letter to Taft, Roosevelt said: "I am sorry you could not come up with Root. I am enclosing a copy of the speech. If you have time, go over it at once and return it to me within a day or two."[48]

During the last few years of his life, it was a custom of his to call a group of close friends to his home at Oyster Bay to listen and to criticize the content of his speeches;[49] occasionally his wife would join in the discussion.[50]

It is clear that Roosevelt made it a rule to seek the knowledge and advice of others concerning the content of his speeches. The question, however, as to how many of the suggestions offered by other men were accepted by Roosevelt is difficult to answer. He undoubtedly accepted and used suggestions on issues with which he was not familiar. We have his own word for accepting some of the ideas. He said that Root went over his Maine speech and that he "accepted practically all of his suggestions."[51]

While Roosevelt sought the advice of others on the content of his speeches, and undoubtedly used many ideas of his friends and advisers, it is doubtful that anyone wrote Roosevelt's speeches. On one occasion a speech concerning the tariff was written for Roosevelt by C. E. Davis to be delivered in Chicago in 1916. However, the audience, after "cheering for three-quarters of an hour, demanded that he talk about the war." Roosevelt yielded, tossed the written manuscript to the floor, and talked about the war.[52]

Roosevelt's habits of putting his material into final speech form followed a fairly definite pattern. He usually did not depend on notes to prepare his speeches; he merely drew from his own experiences and reading. He seemed to have a photographic memory and could recall in essence the things he read and heard.[53] When he felt he was filled sufficiently with his subject to "testify," he either organized the ideas on paper[54] or in his head,[55] and then dictated the speech to his stenographer.[56] The more

[44] Roosevelt House Letters, letter from Roosevelt to Lodge, March 19, 1903.
[45] Thayer, *op. cit.*, p. 329.
[46] Letter, Henry L. Stoddard, New York City, to writer, June 25, 1941.
[47] Roosevelt House Letters, Lodge to Roosevelt, March 5, 1918.
[48] Roosevelt House Letters, Roosevelt to Taft, March 8, 1918.
[49] Letter, William Draper Lewis to the writer, April 14, 1941.
[50] Pringle, *op. cit.*, p. 234.
[51] Library of Congress Letters, Roosevelt to Taft, March 8, 1918.
[52] Letter, Regis H. Post to the writer, April 2, 1941.
[53] Pringle, *op. cit.*, p. 473.
[54] Halstead, Murat, *Life of Theodore Roosevelt* (Akron, 1902), p. 133.
[55] Leupp, Francis H., *The Man Roosevelt* (New York, 1904), p. 305.

important parts of his speeches were written in long hand.[57] The stenographer typed the first rough draft from the transcribed dictation and from Roosevelt's own writing and returned it to him for corrections and revision.[58] Not infrequently, this process was repeated five or six times.[59] Often he would send parts or all of his more important speeches to political advisers, close friends, or experts on the subject on which he was speaking. From these suggestions, he made his final corrections and sent the draft to the typist. While in the White House, his more important speeches were sent to the Government Printing Office; in any event, the printed or typed copy was usually given to the press for publication.

The changes in the corrected manuscripts indicate that Roosevelt was careful in the selection of the content of his speeches, in the use of words, in the structure of the sentences, and in the organization of paragraphs.

The changes in the content of his speeches were discussed in connection with the advice he sought from others.[60] Roosevelt undoubtedy changed the content of his speeches when he discovered that some of his facts were sketchy[61] and when others felt that he was discussing issues which were too controversial.[62]

Perhaps the most frequent changes that Roosevelt made in regard to the selection of words were in respect to hyperbolism. Roosevelt habitually overstated. Many times he would change his own wording so that he expressed a more accurate statement instead of an overstatement. Typical changes of this nature were: changing "every" to "most of;"[63] changing "completely" and "solely" to "effectively;"[64] and "over" to "probably." At other times his advisers cautioned him to refrain from overstatement. "Cut out 'most' and 'high' in the first sentence to avoid exaggeration,"[65] said Whitelaw Reid to Roosevelt concerning his Acceptance Speech in 1904. In the campaign speech during 1918 Taft suggested that Roosevelt soften his "very strong statements as to a lack of preparation for three years before we got into the war."[66]

Other characteristic changes in word selection included the deletion of words to conform to good usage,[67] and the changing of general and abstract words to specific and concrete words.[68]

Typical alterations in sentence structure included the substitution of simple sentences for compound and complex sentences;[69] the combination of short choppy sentences into longer sentences

[56] *Washington Star,* February 13, 1905, article by William E. Curtis.

[57] Brigance, William Norwood, "In the Work Shop of Great Speakers," *American Speech,* I, pp. 587-88.

[58] *Ibid.,* p. 305. *Washington Star,* February 13, 1905.

[59] Roosevelt House Papers, *Manuscripts of Speeches.*

[60] Cf., footnotes 34-49.

[61] Pringle, *op. cit.,* p. 415.

[62] Lodge, *op. cit.,* II, 532. Library of Congress Letters, Taft to Roosevelt, March 11, 1918; Roosevelt to Taft, March 8, 1918.

[63] Library of Congress Letters, Acceptance Speech of 1904; speech at Chicago, Illinois, October 19, 1914.

[64] Speech at St. Louis, Missouri, October 2, 1907. Roosevelt House Letters speeches, Library of Congress photostat.

[65] Library of Congress Letters, Whitelaw Reid to Roosevelt, July 14, 1904.

[66] Library of Congress Letters, Taft to Roosevelt, March 11, 1918.

[67] Library of Congress Speeches, speech at Saratoga Springs, New York, July 18, 1918.

[68] Library of Congress Speeches, speech at Chicago, Illinois, October 19, 1914.

[69] Library of Congress Speeches, speech at Pittsburgh, Pennsylvania, April 10, 1912; speech before the American Historical Congress, San Francisco, California, July 23, 1915.

with proper subordination;[70] the change of sentences that were parallel in thought to make them parallel in form;[71] and the changes of sentences to include the repetition of important words.[72]

Frequent revision in the construction of paragraphs included the addition of one or more sentences to make the meaning clear;[73] the deletion of part of the paragraph;[74] and the division of one paragraph into two or more paragraphs.[75]

Additions were frequently made to the introduction of his speeches in Roosevelt's own hand writing. Most of these additions were made to establish a better rapport with his audience.[76] In the printed and published version of his addresses the introduction or part of the introduction was often omitted.[77]

It is clear that Roosevelt was careful in the preparation of most of his speeches. He followed a fairly definite plan of making a brief outline, dictating to the stenographer, making corrections in writing, sending the final draft of his speeches to others for criticism, including many ideas and thoughts of others, and making corrections, often with the advice of others; but essentially the speeches were unmistakably his own.

Delivery

In spite of certain handicaps, any success that Roosevelt enjoyed as a public speaker was, in a large measure, due to his delivery. It is doubtful that Roosevelt ever received instruction in public speaking. He was, apparently, his own teacher for he said of his experiences in the New York Assembly, "I had difficulty teaching myself to speak."[78]

It is probable that Roosevelt memorized his speeches during the early part of his political career. Concerning one of his speeches to the New York Assembly, he said, "My speech went off very well; I did not forget a word, . . . But I doubt if it really pays to learn a speech by heart."[79] It seemed to a reporter that "he apparently memorized"[80] the speech that he delivered before the Commercial Traveller's Sound Money League in New York on September 10, 1896. As he matured as a speaker, his method of delivery was usually to read from a manuscript. "He nearly always read his speeches; at any rate, his important speeches."[81] He usually carried his manuscript to the platform, "throwing the pages on the floor as he progressed." But Roosevelt rarely read his speeches in the sense of fixing his eyes on the paper rather than on the audience. "He was like a musician playing in a concert who knows his notes perfectly and merely holds his manuscript as a guide."[82] Frequently, remarks were introduced that did not

[70] Library of Congress Speeches, speech at St. Louis, Missouri, October 2, 1907; speech at Pittsburgh, Pennsylvania, April 10, 1912.

[71] Library of Congress Speeches, speech at Bangor, Maine, August 26, 1902.

[72] Library of Congress Speeches, speech at Saratoga Springs, New York, July 18, 1918; speech at Chicago, Illinois, October 19, 1914.

[73] Library of Congress Speeches, speech at Saratoga Springs, New York, July 18, 1918.

[74] Library of Congress Speeches, speech at Wilkesbarre, Pennsylvania, October 14, 1916.

[75] Library of Congress Speeches, speech at the National University, Cairo, Egypt, March 28, 1918.

[76] Library of Congress Speeches, address at Cairo, Egypt, March 28, 1910; speech at Chicago, Illinois, October 19, 1914.

[77] Library of Congress Speeches, speeches at Schenectady, New York, October 17, 1910; at Kingston, New York, October 29, 1910; at Des Moines, Iowa, November 4, 1910.

[78] Roosevelt, *Autobiography*, p. 66.

[79] Cowles, Anna Roosevelt, *Letters from Theodore Roosevelt to Anna Roosevelt Cowles, 1870-1918*, (New York, 1924), p. 20.

[80] *New York Post*, September 11, 1906.

[81] Letter, William Draper Lewis to the writer, April 14, 1941.

[82] Letter, Regis H. Post to the writer, April 2, 1941.

appear in the manuscript,[83] but he usually "stuck to his text so that the papers next day would carry his words correctly."[84]

Roosevelt's style of delivery was individualistic. It is doubtful that he copied any of his contemporaries. He was not an orator in the sense that William Jennings Bryan was an orator. There was a disarming informality about his speaking that made people remark that he was giving an "informal talk;"[85] that he was giving a "heart-to-heart talk;"[86] that he was talking as "though to a circle of men of his own attainments and intelligence."[87] He appeared to be honestly communicating at all times.[88] Each individual in the audience felt that Roosevelt was speaking directly to him. "Listening to his speeches each man feels almost from the start that Colonel Roosevelt is addressing him personally."[89] There was an apparent simplicity and directness in Roosevelt's style of speaking.[90]

Probably the outstanding attribute of Roosevelt's voice was the "ring" of sincerity and earnestness.[91] "His evident sincerity . . . won the sympathies of his audience and often carried conviction." These attributes enabled Roosevelt to hold his audience "as in a spell."[92]

The pitch of Roosevelt's voice was a subject of much discussion. Because he slipped into the falsetto on occasions, it was generally assumed that Roosevelt had a high pitched voice. Expressed in cycles per second, his medium pitch was 178.67[93] which is only slightly higher than the voice of the average man. He did, however, slip into the falsetto to express humor, irony, and sometimes to express emphasis.[94]

While most people observed that Roosevelt had a forceful voice,[95] he complained about the power of his voice throughout his speaking career. While in the New York Assembly, he said, "I do not speak enough from the chest, so my voice is not as powerful as it ought to be."[96] More than once during the Presidential campaign of 1900, he lost his voice completely and Curtis Guild had to speak for him.[97] During a speaking campaign in 1910, he wrote to Lodge, "My throat is in bad shape, and I do not know whether I shall be able to get through."[98]

Whether or not Roosevelt used his voice hygienically, "he carried people off their feet by the force of his eloquence,"[99] and "he had a dynamic punch in his delivery."[100] Roosevelt was usually heard by all in large gatherings because his enunciation was "clipped and staccato."[101]

People observed that Roosevelt was a

[83] *Washington Post*, October 2, 1907; *New York Herald*, July 12, 1908; St. Louis *Globe-Democrat*, September 27, 1907.

[84] Letter, Regis H. Post to the writer, April 2, 1941.

[85] *Chicago Tribune*, April 25, 1896.

[86] *Washington Post*, August 24, 1902.

[87] *New York Sun*, August 25, 1902.

[88] Questionnaire conducted by the writer.

[89] *North American*, Philadelphia, Pennsylvania, September 7, 1910.

[90] Thayer, *op. cit.*, p. 80.

[91] Questionnaire conducted by the writer; letter, Miles Poindexter, Elk Cliff, Grenlee, Virginia, to the writer, April 12, 1941.

[92] Whitingale, John Lee, "Theodore Roosevelt—His Face," *Metropolitan Magazine* (December, 1902), p. 622.

[93] Analysis of record, "The Liberty of the People," by Mr. Jerome Fisher, Department of Speech, University of Iowa, Iowa City, Iowa.

[94] Letters, William Allen White, Julian Street, Regis H. Post to the writer, April, 1941.

[95] Questionnaire conducted by the writer.

[96] Cowles, *op. cit.*, p. 52 (letter to his mother, February 20, 1883).

[97] Thayer, *op. cit.*, p. 152.

[98] Lodge, *op. cit.*, II, 393 (letter to Lodge, October 1, 1910.

[99] Whitingale, *op. cit.*, p. 622.

[100] Letter, Major O. W. Coursey, Mitchell, South Dakota, to the writer, April 8, 1941.

[101] Hale, Annie Riley, "Bull Moose Trains," (Privately printed, 1912), pp. 676-677.

deliberate and moderate speaker.[102] It was his usual practice to begin speaking rather slowly, emphasizing each word, and gathering momentum as he progressed toward the climax of his speech.[103]

As a young speaker, Roosevelt showed many of the signs of embarrassment. In the New York Assembly, he depended "too much on the support afforded by the desk"[104] and "he yelled and pounded his desk."[105] But as he matured as a speaker his actions were more appropriate and controlled. He was usually "natural and easy" and was "generally relaxed."[106] But Roosevelt always appeared vigorous and alive as he spoke. The vigor was apparently expressed by his posture, facial expressions, and the general tone of the whole body.[107] His facial expressions were a constant source of caricature by the cartoonists.[108] His most common expression while speaking was a broad grin showing his teeth. When questioned why he adopted such a facial expression, he replied that "it was more habit than anything else. All short-sighted men have some facial characteristic."[109] Roosevelt apparently gestured considerably as he spoke,[110] but without any particular design or grace. One observer said his gestures were "terrible."[111] His most common gesture was the index finger gesture, leaning toward his audience as he forcefully emphasized his point.

[102] Questionnaire conducted by the writer.
[103] *Detroit* (Michigan) *Journal*, September 22, 1902.
[104] Pringle, *op. cit.*, p. 66.
[105] Roosevelt House Papers, Assembly; (part of a conversation between Hermann Hagedorn, George Spinney, and former Assemblyman Hunt at a Harvard Club dinner in New York City on September 20, 1923).
[106] *North American* (Philadelphia, Pennsylvania), September 7, 1910.
[107] Questionnaire conducted by the writer.
[108] Roosevelt House Papers, "Scrapbook of Cartoons," studied by the writer.
[109] *Rocky Mountain News*, location not given, September 26, 1900.
[110] Questionnaire conducted by the writer.
[111] Letter, William Allen White to the writer, April 12, 1941.

Summary and Conclusions

The first point of interest in this study is that, since Roosevelt never intended to make politics his life work, he did not make any specific preparation in his early education to train himself as a public speaker. Much of his early training as a speaker was the result of his experiences in the New York Assembly.

Roosevelt left a small body of information concerning his theory about public speaking. From these bits of information it is clear that he was not a student of rhetoric. On the other hand they show that he was a fairly astute analyst of how to influence the beliefs and actions of the people. Although he was not a student of classical rhetoric, the core of Roosevelt's theory on public speaking was that a speaker must be a "good man."

In the preparation of his speeches, Roosevelt relied, for the most part, on his convictions, beliefs, experiences, and knowledge. But he drew heavily on the knowledge of others when he felt his own inadequacy on a given subject or when he thought it wise to find out how political leaders were thinking about controversial topics.

Even though Roosevelt sought the advice of others, it is doubtful that he ever delivered a speech written by some one else. He probably wrote or dictated all of his speeches. It was his practice to revise his more important speeches as many as five or six times before delivering them.

Roosevelt was very meticulous in the preparation of his messages. He was

careful, not only in the selection of the content of his speeches, but also in the use of words, in sentence structure and in construction of the introduction. Probably the outstanding changes he made were the deletion of hyperbolic words and the substitution of specific and concrete words for general and abstract words.

In spite of his falsetto and slightly high pitched voice, much of Roosevelt's eminence as a speaker was due to his delivery. He was a conversational yet dynamic and vigorous speaker. As he spoke, he made people feel that he was utterly sincere and that he was talking to each individual in the audience.

It is not maintained that Roosevelt was a great orator; it is probable that he will be remembered as the "trust buster," the "Rough Rider," and the builder of the Panama Canal. But, because of his great importance as a publicist, the study of his preparation and delivery of speeches cannot but be important to students of public speaking.

THE NATIONAL ASSOCIATION *of* TEACHERS OF SPEECH

OFFICERS

JOSEPH F. SMITH—*President*	University of Utah
W. HAYES YEAGER—*Executive Vice-President*	The Ohio State University
W. NORWOOD BRIGANCE—*First Vice-President*	Wabash College
WILLADELL ALLEN—*Second Vice-President*	High School, Park Ridge, Ill.
KARL R. WALLACE—*Editor of the Journal*	University of Virginia
RUSSELL H. WAGNER—*Editor of Research Studies*	Cornell University
LOREN D. REID—*Executive Secretary*	University of Missouri

EXECUTIVE COUNCIL

Term Expires 1945

HERSCHEL L. BRICKER	President of A.E.T.A.	University of Maine
DONALD C. BRYANT	Elected by N.A.T.S. (to fill vacancy)	Washington University
ROBERT B. CAPEL	President of S.A.T.A.	Northwestern State College of Louisiana
LOUIS M. EICH	Elected by N.A.T.S., 1942	University of Michigan
JOHN H. FRIZZELL	President of E.P.S.C.	Pennsylvania State College
HARRY J. HELTMAN	President of A.S.C.A.	Syracuse University
JAMES MCBURNEY	President of C.S.S.A.	Northwestern University
ALAN NICHOLS	President of W.A.T.S.	University of Southern California
THOMAS ROUSSE	Elected by N.A.T.S., 1942	University of Texas
LESTER THONSSEN	Elected by N.A.T.S., 1942	College of the City of New York
CLAUDE M. WISE	President of N.A.T.S., 1942 Ex Officio 1943, '44, '45	Louisiana State University
W. HAYES YEAGER	Executive Vice-President, 1945	The Ohio State University

Term Expires 1946

DINA REES EVANS	Elected by N.A.T.S., 1943	Cleveland Heights High School
KENNETH G. HANCE	Elected by N.A.T.S., 1943	Northwestern University
GERALD E. MARSH	Elected by N.A.T.S., 1943	University of California
FRANKLIN H. KNOWER	Elected by N.A.T.S., 1944 (to fill vacancy)	State University of Iowa
ROBERT WEST	President of N.A.T.S., 1943 Ex Officio 1944, '45, '46	University of Wisconsin

Term Expires 1947

BOWER ALY	President of N.A.T.S., 1944 Ex Officio 1945, '46, '47	University of Missouri
W. NORWOOD BRIGANCE	Editor of Q.J. of N.A.T.S., 1942, '43, '44 Ex Officio 1945, '46, '47	Wabash College
MAGDALENE KRAMER	Elected by N.A.T.S., 1944	Columbia University
P. MERVILLE LARSON	Elected by N.A.T.S. 1944	Southwest Texas State Teachers College
RUTH THOMAS	Elected by N.A.T.S., 1944	Public Schools, Passaic, N. J.
ANDREW T. WEAVER	Elected by N.A.T.S., 1944	University of Wisconsin

Term Expires 1948

RUPERT L. CORTRIGHT	Executive Secretary of N.A.T.S., July 1942—June 1945 Ex Officio July 1945—June 1948	Wayne University
JOSEPH F. SMITH	President of N.A.T.S., 1945 Ex Officio 1946, '47, '48	University of Utah

Term Expires 1950

RUSSELL H. WAGNER	Research Editor of N.A.T.S., 1945, '46, '47 Ex Officio 1948, '49, '50	Cornell University
KARL R. WALLACE	Editor Q.J. of N.A.T.S., 1945, '46, '47 Ex Officio 1948, '49, '50	University of Virginia

Term Expires 1951

LOREN D. REID	Executive Secretary of N.A.T.S., July, 1945—June, 1948 Ex Officio July, 1948—June, 1951	University of Missouri